How To Do a…Scavenger Hunt!

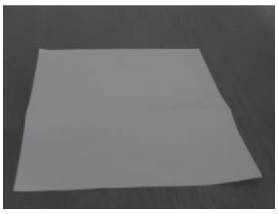
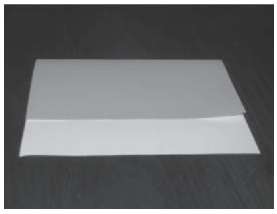
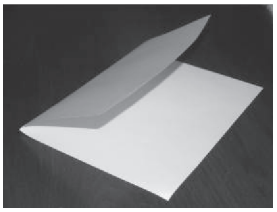
Scavenger Hunts:

1. encourage student mobility
2. fully engage students
3. provide a means for the pairing/partnering of students
4. provide instant response for a correct (or incorrect) answer
5. are an atypical way to complete worksheet-type problems

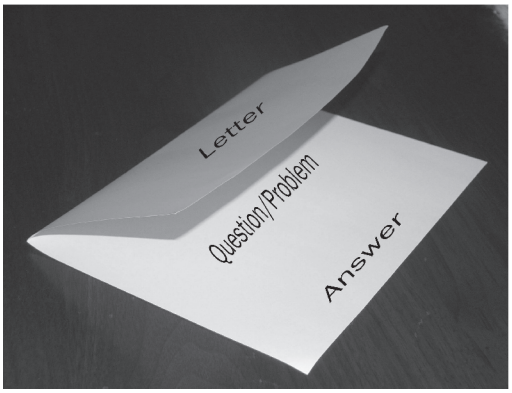
Scavenger Hunts are an excellent way to review prior to a quiz or test. They're fun, innovative, and effective.

Materials: construction paper (1 piece for each poster), markers, scavenger hunt answer key/teacher page, tape (or some other means of hanging the posters – magnets, push pins, staples, etc.)

1. Orient the paper vertically and fold the top of the paper toward the bottom, leaving about 1½ - 2 inches of the bottom visible. This creates a flap for the poster.

2. Using the teacher page, each square has three components: a) poster letter on outside, b) poster answer on bottom, visible from afar and c) poster question/ problem inside under flap. With a dark marker, transfer all three components of the first square to a poster using the following template:



3. Repeat the transfer for each square on the teacher page.

4. Hang the posters in a variety of places ensuring posters do not follow the correct order. Make sure to mix them up well. Ideas on where to hang posters include: walls, desktops, fronts of lockers, doors, windows, white boards, high places, low places, etc. Make it interesting and fun – be creative!

How To Do a...Scavenger Hunt!

5. Group students in pairs.

6. Assign each pair of students a different poster letter and release students to find that poster and stand in front of it.

7. Using their answer sheet, students are to record by #1 the poster letter with which they're starting.

8. Students are to ignore the answer portion of the first poster. They should lift the flap, then copy and solve the problem underneath showing all work.

9. Students then hunt for the poster that contains the answer they're looking for at the bottom of the poster (in the answer portion).

10. Once students have found the correct poster, they're to record their second poster letter by #2 and lift the flap, copy and solve the problem, and find the next poster in the sequence.

11. Students will repeat this process until they've done two things: a) come back to the poster at which they began, AND b) visited every poster available.

Helpful Hints and Tips:

- Old file folders work great as posters. You will just need to snip a little off one of the sides to have room for the answer portion of the poster design.
- Laminating blank pieces of construction paper would allow you to write on the laminate with a dry erase marker and reuse the posters.
- Take the scavenger hunt to the hallway or outside. Require students to communicate only through writing so as not to disturb other classes.
- Require students to show their work on their answer sheets so you can assist them with errors and mistakes. This could also serve as their grade for the day.
- If posters require graphs or charts according to the teacher pages, consider making a copy of the teacher page and taping or gluing the graphs and charts on the inside of the poster versus recreating them by hand and risk making a mistake.
- Before allowing the students to begin the scavenger hunt, double check the posters to make sure the problems and order are correct.
- For students not capable/willing to work with a partner, use your discretion to decide if you want the student to work alone to complete the scavenger hunt or provide the student with the problems to work independently so they're not missing out on the review.
- Establish clear expectations of acceptable and unacceptable behavior during a scavenger hunt and have consequences or alternative assignments ready.

NAME:_____ DATE: _____

Scavenger Hunt

Keep track of the order in which you work the problems. Show all of your work.

1. Poster _____
Show your work:

2. Poster _____
Show your work:

3. Poster _____
Show your work:

4. Poster _____
Show your work:

5. Poster _____
Show your work:

6. Poster _____
Show your work:

7. Poster _____
Show your work:

8. Poster _____
Show your work:

Scavenger Hunt

Keep track of the order in which you work the problems. Show all of your work.

9. Poster _____
Show your work:

10. Poster _____
Show your work:

11. Poster _____
Show your work:

12. Poster _____
Show your work:

13. Poster _____
Show your work:

14. Poster _____
Show your work:

15. Poster _____
Show your work:

16. Poster _____
Show your work:

17. Poster _____
Show your work:

18. Poster _____
Show your work:

How To Do...I Have, Who Has!

I Have, Who Has:

1. requires student participation with minimal effort/output
2. fully engages all students
3. calls on intense auditory processing
4. can be used multiple times
5. is a whole-class activity

I Have, Who Has is an excellent way to review materials and can also be used prior to a quiz or test.

Materials: teacher page, scissors, plastic bags or envelopes

1. Make one copy of the teacher page for a class set of cards.

2. Cut the cards apart.

3. Distribute cards among students so that all students have close to an equal number of cards. If there are more students than cards, have students work collaboratively.

4. Choose a student to begin. The student will read their entire card to the class with students paying particular attention to the "Who Has" portion of the card. Whoever has the correct response immediately begins reading their card.

5. The round is over when all cards have been read and the last "Who Has" brings you back to the student who began the activity.

6. Repeat activity at least once more.

Sample I Have, Who Has

I have 3. **Who has** five increased by two?	→	**I have** 7. **Who has** one decreased by four?	→	**I have** $^{-}3$. **Who has** the product of two and negative three?	→	**I have** $^{-}6$. **Who has** the quotient of negative six and negative two?	Back to the beginning...

How To Do...I Have, Who Has!

Helpful Hints and Tips:

- Copying the activity onto card stock or laminating individual cards will help the deck last longer.
- Keep time the first round, then collect, shuffle and redistribute cards, and challenge the class to beat their first round time. This can be repeated several times in this fashion.
- An easy starting point would be with the person or teacher who has the upper left card on the teacher page. It makes it easier for following along with students.
- For students who have extreme difficulty with auditory processing, consider making a copy of the cards on a transparency and displaying the card that's being read for everyone to see OR write the "Who Has" portion on the board or overhead as it's read aloud.
- As students read/use their card(s), have them flip the card over so it's easy to keep track of what cards have been used and what cards have not.
- Clearly, listening and paying attention are two skills necessary for the success of this activity. Be prepared for the first round to be a little challenging.
- As a silent activity, students can line up by finding the matching card.

How To Do a…Mystery Square!

Mystery Squares provide students with practice for many concepts. The activity can be completed individually or in cooperative pairs.

Materials: activity, scissors or paper cutter, plastic bags or envelopes

1. Make enough copies of the activity for students (either individually or in cooperative pairs).
2. Cut the squares apart and place them in a plastic bag or envelope.
3. Distribute one set of squares to each student or pair of students.
4. Students may begin with any square they like and try to match a problem with its answer.
5. Students are finished when they successfully arrange the cards to form a perfect square where each problem is matched with its correct answer.

80 25 F 100 ÷ 100 35 ÷ 7	120 ÷ 4 1 A 60 30 ÷ 10	21 420 ÷ 7 S 68 121 ÷ 11
5 39 ÷ 3 I 18 ÷ 9 41	3 2 U 568 ÷ 4 772 ÷ 2	11 142 O 1000 ÷ 100 637 ÷ 7
164 ÷ 4 19 T 837 ÷ 9 74	386 93 E 210 ÷ 7 10,000 ÷ 10	91 30 N 328 ÷ 8 1000

How To Do a...Mystery Square!

Helpful Hints and Tips:

- Squares are arranged in the correct order on the teacher page, so it is recommended that squares are cut out prior to being distributed to students.
- The top-left to bottom-right diagonal always spells a word. This allows you to quickly glance at a student's final product and know if he/she has completed it correctly.
- For students who are overwhelmed or confused by mystery squares, you can help by identifying the placement of one of the corner pieces. Consider making a copy of the teacher page onto a transparency and helping students get started as a group on the overhead.
- Unless you are re-using the squares, have students solve the problems on the squares to help them find a match.
- Cards have letters on them for two reasons: 1) for easy grading and 2) to give each square a designated orientation. Letters need to be right side up. This will ensure, should there be repeat answers among the cards, that there is only one possible way to match a problem with its answer.
- Copying cards onto card stock will help the cards last through multiple classes/ years provided students do not write on them.

How To Do...Chain Reaction!

Chain Reaction:

1. requires student participation with minimal effort/output
2. fully engages students
3. provides a means for the pairing/partnering of students
4. provides instant response for a correct (or incorrect) answer
5. is an atypical way to complete worksheet-type problems

Chain Reaction is an activity to review topics recently covered in class. It is an excellent way to review prior to a quiz or test. Chain Reaction is a variation of the Scavenger Hunt.

Materials: teacher page, scissors, plastic bags or envelopes

1. Make enough copies of the teacher page for students (either individually or in cooperative pairs).

2. Cut the cards apart and place them in a plastic bag or envelope for the students.

3. Distribute one set of cards to each student or pair of students.

4. Students may begin with any card they like and match the problem at the bottom of a card with its answer at the top of another card.

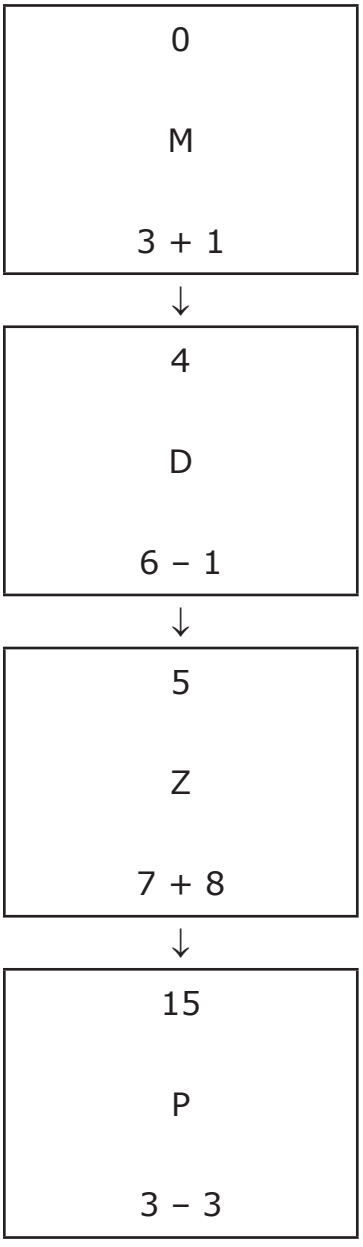
5. Students are finished when they successfully arrange the cards so that all problems have correct answers in a chain.

Helpful Hints and Tips:

- It's recommended to cut out the cards prior to distributing them to students as the chain reaction cards are in order.
- You may have students solve the problems on the cards unless you want to reuse them.
- Students can tape or glue their cards onto construction paper to create a design, as long as each card is appropriately matched problem to answer.
- Students can begin with any card they wish. When grading their final product, simply scan the answer key for the card with which they began and move forward from that card.
- Copying the cards on card stock will help them last through multiple classes or years provided students do not write on them.

How To Do...Chain Reaction!

Sample Chain Reaction



Back to the beginning....

Unit Rates - Chain Reaction

25 chairs per row F At the fruit market, they sell 3 pounds of bananas for $1.65. What is the unit rate per pound of bananas?	$7.00 per hour worked K John can skate 1,500 meters in 50 seconds. What is the unit rate of his skating?	$\frac{2}{1}$ or 2 tulips per daisy A Sally is making snack mix. For each batch she makes, she needs $\frac{2}{3}$ cup of popcorn and $\frac{1}{2}$ cup of pretzels. What is the unit rate of popcorn to pretzels?	$\frac{5}{1}$ or 5 laps per minute E Steak is on sale at the market in a 3-pound package. The package costs $17.85. What is the unit rate of steak per pound?
$0.55 per pound W Janice can walk 3 miles in 45 minutes. What is the unit rate for minutes per mile?	30 meters per second B Tina bought 12 gallons of gas for $42. What was the unit price for the gas?	$1\frac{1}{3}$ cups of popcorn per cup of pretzels Z The Johnson family was traveling by car on vacation. They traveled 324 miles in 6 hours. If they traveled at a constant speed, what was the unit rate of miles per hour?	$5.95 per pound L Susan makes 3 batches of cookies and uses a total of $1\frac{1}{2}$ cups of sugar. What is the unit rate of sugar to each batch of cookies?
15 minutes per mile D In the cafeteria,12 pizzas are divided into a total of 96 pieces. What is the unit rate of pieces to pizzas?	$3.50 per gallon of gas G A scale drawing has a scale of $\frac{1}{2}$ inch to 5 feet. What is the unit rate of inches to feet?	54 miles per hour M Sharon is making a beaded necklace. She uses a total of 36 yellow beads and 9 blue beads. What is the unit rate of yellow beads to blue beads?	$\frac{1}{2}$ cup of sugar per batch P Mr. Thomas is putting new tile in his kitchen. He needs a total of 150 tiles which have a total cost of $100. What is the unit rate per tile?
$\frac{8}{1}$ or 8 pieces per pizza N Annie applied for a part-time position at a department store. She will earn $140 for working 20 hours. What is the unit rate per hour that she earns?	$\frac{1}{10}$ inch to each foot T In a flower garden, there are fourteen tulips for every seven daises. What is the unit rate of tulips to daisies?	$\frac{\text{4 yellow beads}}{\text{1 blue bead}}$ H During a bicycle race, the winner is able to complete 35 laps on the track in 7 minutes. What is the unit rate of laps per minute?	$0.67 per tile C The 7th grade students are helping to arrange rows of chairs in the cafeteria for a program. There are a total of 250 chairs in 10 rows. What is the unit rate of chairs per row?

Key: F, W, D, N, K, B, G, T, A, Z, M, H, E, L, P, C, back to F

Proportional Relationships – Chain Reaction

$x = 12$ A Find the fraction that is equivalent to $\frac{3}{4}$.	$x = 6$ R Find the fraction that is equivalent to $\frac{7}{8}$.	$\frac{7}{3} = \frac{14}{6}$ J Solve the proportion for *n.* $\frac{9}{15} = \frac{6}{n}$	$\frac{30}{42}$ S Which of the following shows a proportional relationship? $\frac{4}{8} = \frac{7}{13}$ or $\frac{4}{6} = \frac{8}{12}$
$\frac{21}{28}$ K Which of the following shows a proportional relationship? $\frac{2}{3} = \frac{6}{9}$ or $\frac{3}{5} = \frac{5}{7}$	$\frac{35}{40}$ H Solve the proportion for *n.* $\frac{4}{10} = \frac{2}{n}$	$n = 10$ P Find the fraction that is equivalent to $\frac{5}{6}$.	$\frac{4}{6} = \frac{8}{12}$ B Solve the proportion for *x.* $\frac{12}{3} = \frac{4}{x}$
$\frac{2}{3} = \frac{6}{9}$ E Find the fraction that is equivalent to $\frac{9}{6}$.	$n = 5$ N Solve the proportion for *x.* $\frac{5}{8} = \frac{15}{x}$	$\frac{20}{24}$ C Which of the following shows a proportional relationship? $\frac{1}{3} = \frac{9}{27}$ or $\frac{6}{9} = \frac{8}{10}$	$x = 1$ G Solve the proportion for *n.* $\frac{3}{2} = \frac{12}{n}$
$\frac{27}{18}$ L Solve the proportion for *x.* $\frac{6}{9} = \frac{4}{x}$	$x = 24$ D Which of the following shows a proportional relationship? $\frac{2}{5} = \frac{7}{21}$ or $\frac{7}{3} = \frac{14}{6}$	$\frac{1}{3} = \frac{9}{27}$ F Find the fraction that is equivalent to $\frac{10}{14}$.	$n = 8$ M Solve the proportion for *x.* $\frac{4}{9} = \frac{x}{27}$

Key: A, K, E, L, R, H, N, D, J, P, C, F, S, B, G, M, back to A

Identifying the Constant of Proportionality – Scavenger Hunt - Page 1 of 4

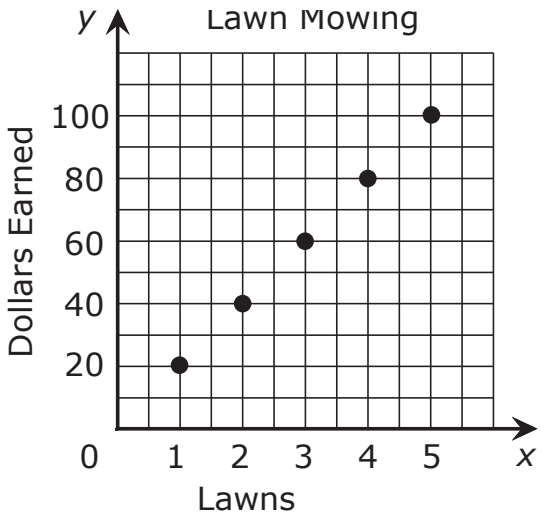
3.5

E

What is the constant of proportionality for circles to stars?

1.75

A



What is the constant of proportionality?

4

O

Identify the constant of proportionality in the table.

x	2	5	8
y	30	75	120

20

J

There is a proportional relationship between the number of students going on the field trip and the number of buses needed. There is a total of 180 students on the trip, and the school uses 5 buses. What is the constant of proportionality for the number of buses used?

Key: E, O, P, B, L, R, D, N, A, J, K, F, G, C, H, M, back to E

Identifying the Constant of Proportionality – Scavenger Hunt - Page 2 of 4

15

P

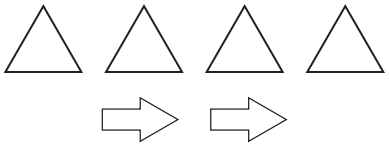
Identify the constant of proportionality in the equation.

$y = 0.75x$

36

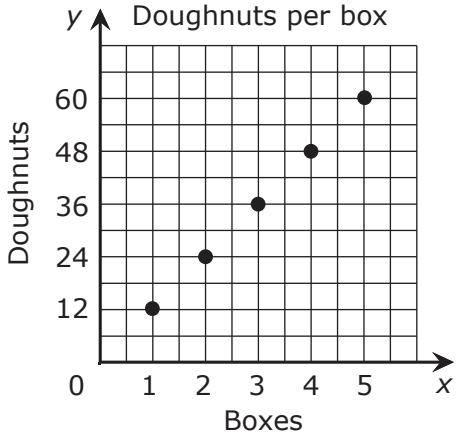
K

What is the constant of proportionality for triangles to arrows?



0.75

B



What is the constant of proportionality for the number of donuts per box?

2

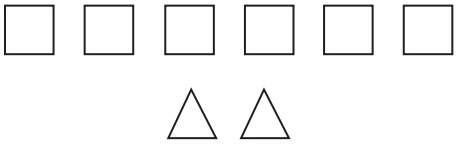
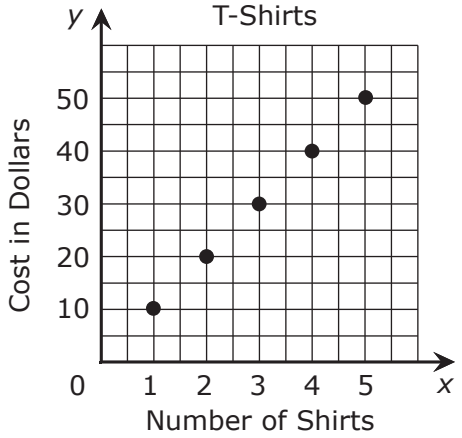
F

Identify the constant of proportionality in the table.

Laps on the track	2	5	10
Meters	250	625	1,250

Key: E, O, P, B, L, R, D, N, A, J, K, F, G, C, H, M, back to E

Identifying the Constant of Proportionality – Scavenger Hunt - Page 3 of 4

12 L For the community picnic, there are 120 people in each group. If the paper plates come in packages of 15, what is the constant of proportionality for the number of packages of plates needed?	125 G Identify the constant of proportionality in the equation. $y = 13x$
8 R What is the constant of proportionality for squares to triangles? 	13 C  What is the constant of proportionality for the tee-shirts?

Key: E, O, P, B, L, R, D, N, A, J, K, F, G, C, H, M, back to E

Identifying the Constant of Proportionality – Scavenger Hunt - Page 4 of 4

3

D

Identify the constant of proportionality in the table.

Number of Guests	5	20	50
Dinner Cost ($)	55	220	550

10

H

Identify the constant of proportionality in the table.

x	2	7	12
y	13	45.5	78

11

N

Identify the constant of proportionality in the equation.

$y = 1.75x$

6.5

M

Identify the constant of proportionality in the equation.

$y = 3.5x$

Key: E, O, P, B, L, R, D, N, A, J, K, F, G, C, H, M, back to E

Representing Proportional Relationships with Equations – Scavenger Hunt - Page 1 of 4

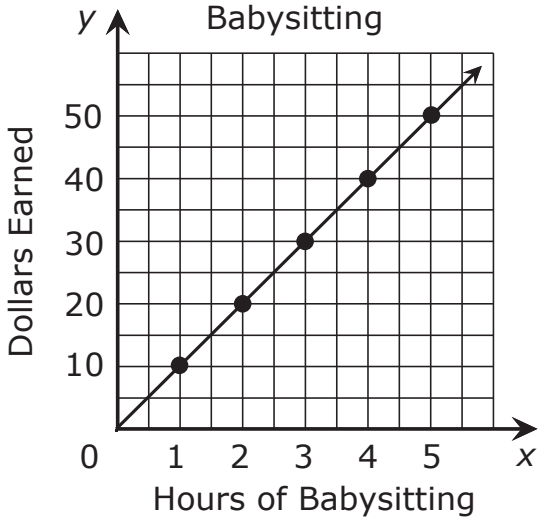
$y = 18x$

B

Write an equation that represents the proportional relationship of squares (y) to stars (x).

$y = \frac{1}{4}x$

E



Write an equation that represents the proportional relationship between money earned (y) and hours of babysitting (x).

$y = 4x$

L

Write an equation that represents the following proportional relationship.

x	4	5	8
y	20	25	40

$y = 10x$

H

At the school supply store, the pencils are $0.75 each. Write an equation to represent the relationship between the total cost (y) and the number of pencils purchased(x).

Key: B, L, M, I, D, F, K, G, E, H, P, C, J, N, A, O, back to B

Representing Proportional Relationships with Equations – Scavenger Hunt - Page 2 of 4

$y = 5x$

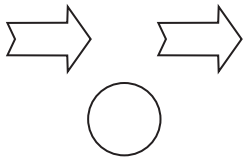
M

During the summer, Jack has a lawn mowing business. He charges $30 per lawn that he mows. Write an equation to represent the relationship between the number of lawns mowed (x) and the total money earned (y).

$y = 0.75x$

P

Write an equation that represents the number of arrows (y) to circles (x).



$y = 30x$

I

The Art Club is having a school fundraiser. For each box of popcorn they sell (x), they make a profit of $0.45. Write an equation that can be used to determine the total profit (y) they will make on the sale.

$y = 2x$

C

Write an equation that represents the following proportional relationship.

x	2	3	4
y	70	105	140

Key: B, L, M, I, D, F, K, G, E, H, P, C, J, N, A, O, back to B

Representing Proportional Relationships with Equations – Scavenger Hunt - Page 3 of 4

$y = 0.45x$

D

Write an equation that represents the following proportional relationship.

x	2	5	8
y	30	75	120

$y = 35x$

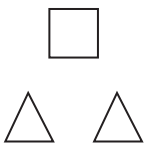
J

Portia receives an allowance of $9.00 per week. Write an equation to show the relationship between the number of weeks (x) and the total money she can earn (y).

$y = 15x$

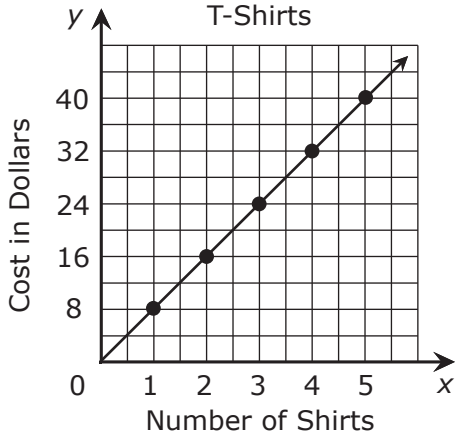
F

Write an equation that represents the number of squares (y) to triangles (x).



$y = 9x$

N



Write an equation to represent the cost of t-shirts.

Key: B, L, M, I, D, F, K, G, E, H, P, C, J, N, A, O, back to B

Representing Proportional Relationships with Equations – Scavenger Hunt - Page 4 of 4

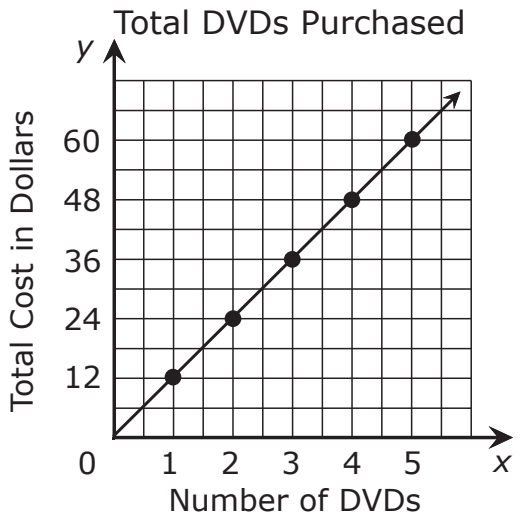
$y = \frac{1}{2}x$ K Mrs. Thompson is hosting a party. The cost for each guest is $20. Write an equation that represents the relationship between the number of guests (x) and the total cost of the party (y).	$y = 8x$ A Write an equation that represents the following proportional relationship. x: 2, 7, 12 y: 13, 45.5, 78
$y = 20x$ G Write an equation that represents the following proportional relationship. x: 52, 182, 312 y: 13, 45.5, 78	$y = 6.5x$ O Tickets to a performance at a local theater cost $18. Write an equation to show the relationship between the number of seats in the theater (x) and the total money taken in for a performance (y).

Key: B, L, M, I, D, F, K, G, E, H, P, C, J, N, A, O, back to B

Proportional Relationships in Graphs – Scavenger Hunt - Page 1 of 4

$y = \frac{1}{40}x$

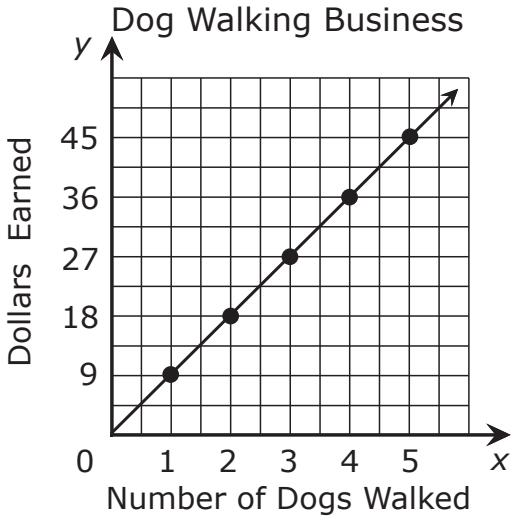
A



What ordered pair represents the cost of 3 DVDs?

(3, 30)

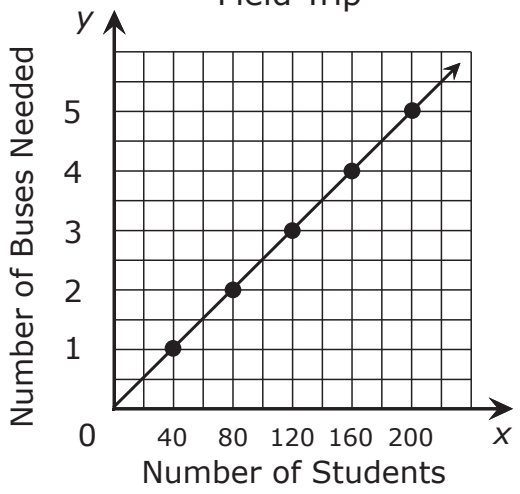
T



What does the ordered pair (2, 18) represent?

(3, 36)

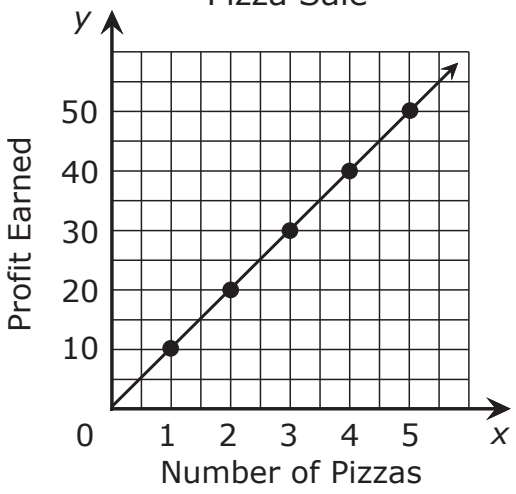
M



How many buses are needed for 200 students?

For 2 dogs walked, the dollars earned will be $18.00.

F



What equation can be used to represent the relationship between the number of pizzas sold and the total pizza profits?

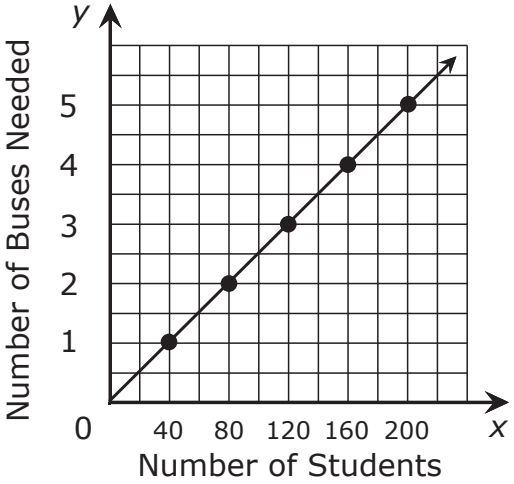
Key: A, M, G, P, C, W, Z, L, T, F, V, B, K, R, S, D, back to A

Proportional Relationships in Graphs – Scavenger Hunt - Page 2 of 4

5

G

Field Trip

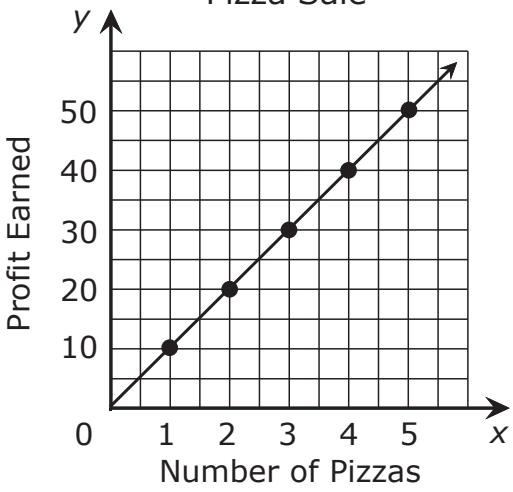


What ordered pair represents the number of buses needed for 160 students?

$y = 10x$

V

Pizza Sale

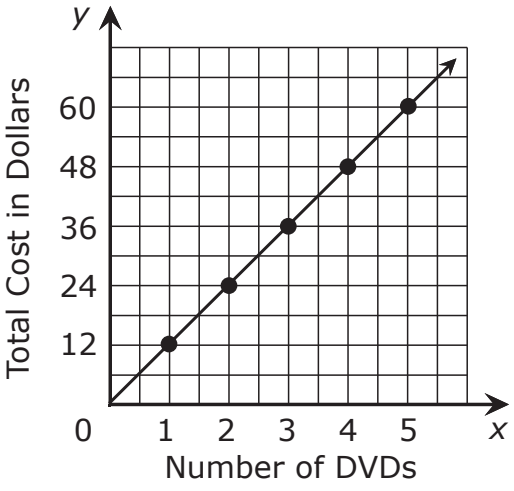


What does the ordered pair (4, 40) represent?

(160, 4)

P

Total DVDs Purchased

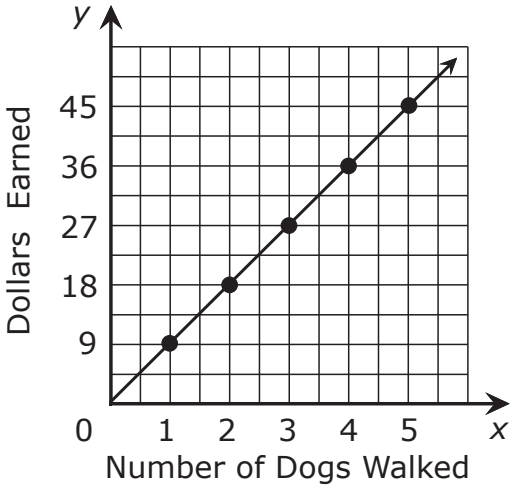


What unit rate is the constant of proportionality represented in the graph?

If 4 pizzas are sold, the profit will be $40.00.

B

Dog Walking Business



What equation can be used to represent the relationship between the number of dogs walked and the dollars earned?

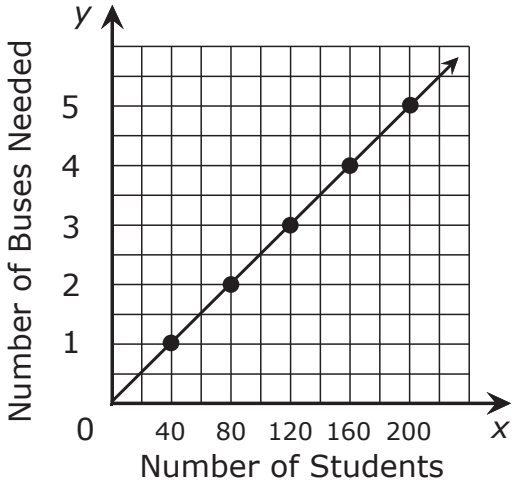
Key: A, M, G, P, C, W, Z, L, T, F, V, B, K, R, S, D, back to A

Proportional Relationships in Graphs – Scavenger Hunt - Page 3 of 4

12

C

Field Trip

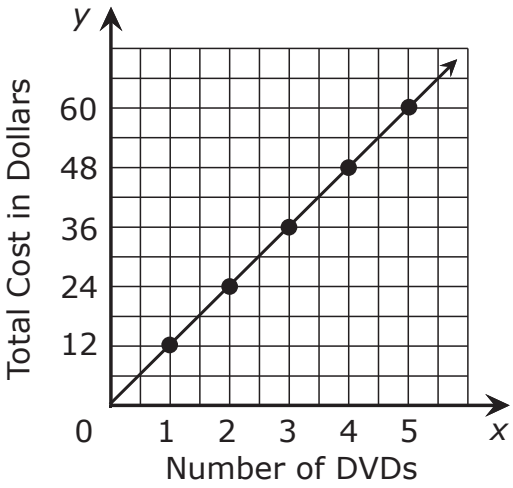


What does the ordered pair (80, 2) represent?

$y = 9x$

K

Total DVDs Purchased

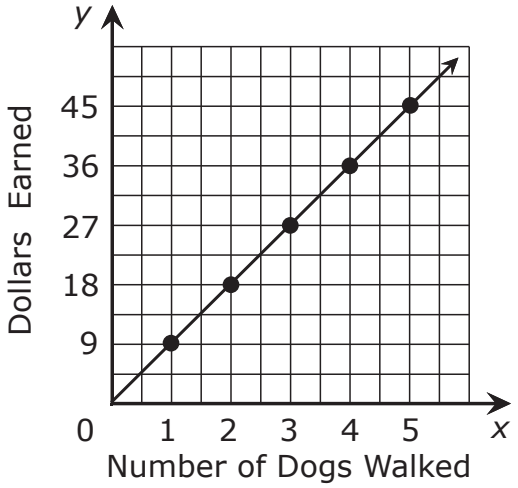


What equation can be used to represent the relationship between the number of DVDs purchased and the total cost of the DVDs?

If there are 80 students on the field trip, they will need 2 buses.

W

Dog Walking Business

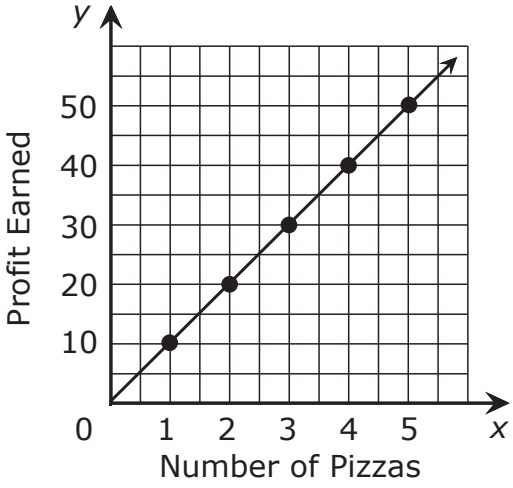


What ordered pair represents the dollars earned for walking 4 dogs?

$y = 12x$

R

Pizza Sale



What is the profit for selling 5 pizzas?

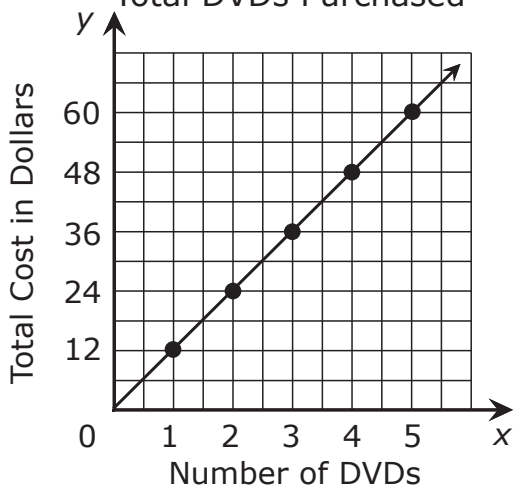
Key: A, M, G, P, C, W, Z, L, T, F, V, B, K, R, S, D, back to A

Proportional Relationships in Graphs – Scavenger Hunt - Page 4 of 4

(4, 36)

Z

Total DVDs Purchased

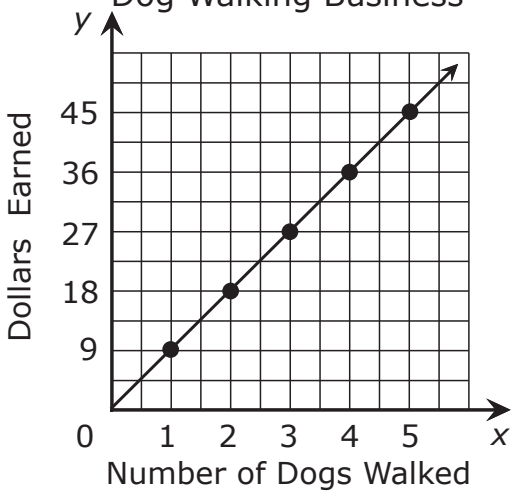


What does the ordered pair (5, 60) represent?

$50.00

S

Dog Walking Business

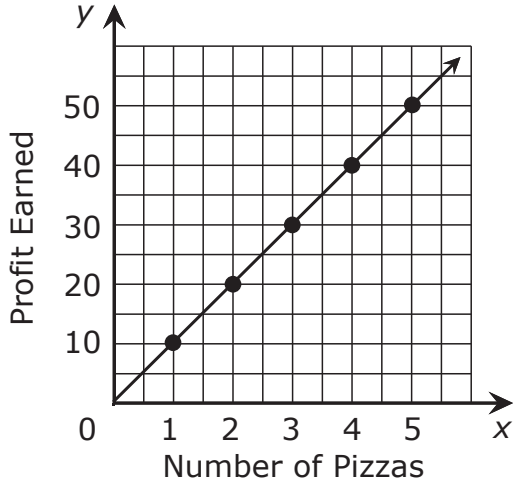


How much is earned for walking 5 dogs?

The cost of 5 DVDs is $60.00.

L

Pizza Sale

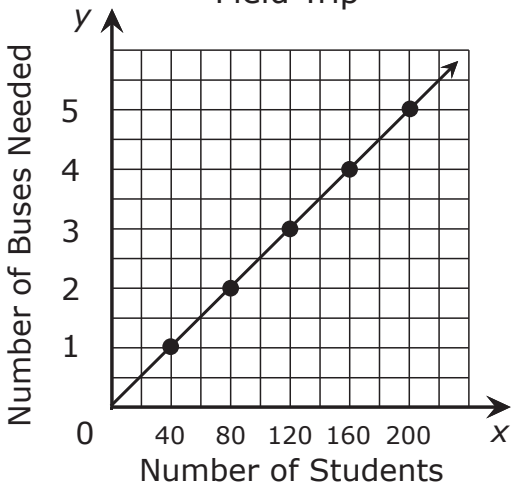


What ordered pair represents the profits earned for selling 3 pizzas?

$45.00

D

Field Trip



What equation can be used to represent the relationship between the number of students and the number of buses needed?

Key: A, M, G, P, C, W, Z, L, T, F, V, B, K, R, S, D, back to A

Percents in Real-Life Situations – Scavenger Hunt - Page 1 of 4

$7,500 A There is a sweater at the mall with a price of $45.00. If the sales tax is 6%, what is the total price of the sweater including tax?	$48.00 J Mrs. Halton is looking at a new table for her living room. The table has a regular price of $300, but is marked down by 30%. What is the sale price of the table?
$47.70 H The Johnson family went out to dinner to celebrate Tina's birthday. The dinner bill was $60.00. If Mr. Johnson wanted to leave an 18% tip, what is the amount of the tip?	$210 T At the mall, there is a shoe store where all the sales people receive a 6% commission on all the shoes they sell. If a salesperson sells $550 of shoes in one day, what will be the commission on that amount?

Key: A, H, K, G, C, F, M, E, J, T, B, L, S, R, D, P, back to A

Percents in Real-Life Situations – Scavenger Hunt - Page 2 of 4

$10.80 K The 8th grade orders tee-shirts to sell as a fundraiser. They pay for the tee-shirts when they order them. At the end of the sale, they send back $400 worth of tee-shirts to the company. If there is a 7% restocking fee, how much will they have to pay the company for the return?	$33.00 B At a gift shop, there is a clock that costs $50.00. If the sales tax on the clock is 5%, what is the total cost of the clock including tax?
$28.00 G A car salesman at a local car dealership received a 3% commission for each car sold. If a salesman sells a car for $18,000, what is the commission on that sale?	$52.50 L If the lunch bill at a restaurant is $42.00 and you want to leave a 15% tip, what is the total cost of the lunch?

Key: A, H, K, G, C, F, M, E, J, T, B, L, S, R, D, P, back to A

Percents in Real-Life Situations – Scavenger Hunt - Page 3 of 4

$540 C Jason has been saving money to buy a new skateboard. The cost of the skateboard is $105. If the sales tax is 8%, what is the total cost of the skateboard including tax?	$48.30 S A local clothing store buys a large order of jeans. The jeans have a regular price of $20.00 but are on sale for 20% off. What is the sale price of the jeans?
$113.40 F During a quarterly report, the owner of a local coffee shop discovers that he must raise his prices in order to make a profit. If a cup of coffee costs $3.50 and there is an increase of 12% in the cost, what is the new cost for a cup of coffee?	$16.00 R During the holiday sale, all televisions at The TV Outlet Store are on sale. If a television has a regular price of $600 and the discount is 15% off, what is the sale price?

Key: A, H, K, G, C, F, M, E, J, T, B, L, S, R, D, P, back to A

Percents in Real-Life Situations – Scavenger Hunt - Page 4 of 4

$3.92 M The local cell phone store is having a sale. All phones are on sale at a 50% discount. What is the sale price of a phone that regularly sells for $75?	$510 D An online clothing company is having a special on shipping and handling charges during the holiday season. The company usually charges a shipping and handling fee of 6%. If a customer has an order of $250, how much will they save by not having to pay shipping and handling?
$37.50 E The cell phone company is offering a special monthly rate if you sign a one-year contract. If the monthly rate is normally $40, and the special offer is 10% off per month for one year, what would be the total amount saved in 12 months?	$15.00 P A real estate agent has negotiated a 5% commission on house sales for the month of June. If the agent sells a home with a value of $150,000, what is the commission on that sale?

Key: A, H, K, G, C, F, M, E, J, T, B, L, S, R, D, P, back to A

Percent of Change – Chain Reaction - Page 1 of 4

60% increase G Trevor is buying a suit. The one that he likes costs $275. It is on sale for 35% off. How much will he have to pay for the suit?	90% decrease A In October 2008, a gallon of gas cost an average of $2.77. In October 2009, a gallon of gas cost an average of $3.15. What is the percent change in gas prices from 2008 to 2009? (Round to the nearest hundredth.)
$178.75 R A jeweler bought an antique watch for $500. He then sold it in his store for $850. What was the percent change in the price of the watch?	13.72% increase F What is the percent of change if a number goes from 90 to 81? Is it a percent decrease or a percent increase?

Key: G, R, H, P, C, E, M, T, A, F, B, Z, K, N, L, D, back to G

Percent of Change – Chain Reaction - Page 2 of 4

70% increase H Janeka is buying a sweater. The tag on the sweater has a price of $28. However, the sale sign says that all sweaters are on sale for 20% off. How much will she pay for the sweater?	10% decrease B The Tonkin family recently upgraded their cable tv service and added more channels. Their monthly bill has increased from $42 to $63. What is the percent of change in their bill?
$22.40 P The local police chief said that this week the revenue from parking tickets increased 18% from $800 last week. How much money was collected from parking tickets this week?	50% increase Z What is the percent of change if 64 is decreased to 48?

Key: G, R, H, P, C, E, M, T, A, F, B, Z, K, N, L, D, back to G

Percent of Change – Chain Reaction - Page 3 of 4

$944 C Marta decided to sell some of her CD collection at her family's garage sale. She reduced her collection by 30%. If she began with 130 CDs, how many does she have now?	25% decrease K Nick is in a bowling league. This is his second year in the league. Last year his average was 115. This year his average so far is 131. What is the percent of change in his bowling average? (Round to the nearest hundredth.)
91 CDs E The temperature this morning when Vu woke up was 68°F. When he checked the temperature again there was a 20% increase in the temperature. How many degrees did the temperature increase?	13.91% increase N Suzanne took her cat to the veterinarian. The veterinarian said that, at 22 pounds, the cat was overweight. She put the cat on a diet, and two months later, the cat weighed 19 pounds. What was the percent of decrease in the cat's body weight? (Round to the nearest hundredth.)

Key: G, R, H, P, C, E, M, T, A, F, B, Z, K, N, L, D, back to G

Percent of Change – Chain Reaction - Page 4 of 4

13.6° M At Kennedy Middle School, there are 239 eighth-grade students. Last year, there were 197 students. What is the percent of change in the eighth-grade enrollment? (Round to the nearest tenth.)	13.64% decrease L A sports store keeps track of how many skateboards they sell each month. Last month, they sold 302 skateboards. This month, they have sold 228 skateboards. What is the percent of change in skateboard sales? (Round to the nearest tenth.)
21.3% increase T What is the percent of change if 80 is decreased to 8?	24.5% decrease D What is the percent of change if 100 is increased to 160?

Key: G, R, H, P, C, E, M, T, A, F, B, Z, K, N, L, D, back to G

Add Integers - Think Maximum - **Page 1 of 2**

Materials:

Two-color unit tiles to cover squares on the game board
Student copies of Think Maximum

How to Play:

- The first round can be played **teacher vs. students** to **introduce the rules of the game. (Hint: Use red tiles to mark the squares that have already been used and one yellow tile to mark the last move.)**
- Think Maximum is a two-player game.
- Players get points by covering squares on the game board. Point values are the values **within** the square the player selects.
- Player 1 may only move up and down. **(columns)**
- Player 2 may only move left and right. **(rows)**
- Place a yellow unit tile on the space M. This is the starting point, and this counter is your moving piece for the entire activity.
- Player 1 goes first by selecting any **number in the column of the yellow tile**, either up or down from the M.
- Move the yellow tile to the square selected and **place a red tile on the M to identify that M has been used.**
- Player 1 receives the point value in this square for this round.
- Player 2 follows by selecting any square **in the row of the yellow tile,** left or right from the square Player 1 previously picked.
- Player 2 receives the point value in the square selected for this round. Place a red tile on this square to **identify that this number has already been used** and can no longer be selected by either player.
- Player 1 follows by selecting any square **in the column of the yellow tile,** up or down from the square Player 2 selected.
- Play continues in this fashion, **using the yellow tile to identify the last move and red tiles to identify squares that have been chosen.**
- Players keep a running total of their points throughout the game.
- When there are no moves that a player can make (all spaces in their row or column are covered), the game is over, and the player with the most points wins.

Add Integers - Think Maximum - **Page 2 of 2**

-2	9	-3	4	-5	3	12
-5	-4	-2	8	**M**	7	7
2	0	-8	-1	6	-8	-4
11	-4	3	-9	1	2	-7
-3	7	8	-4	0	-2	-5
5	3	-2	6	-7	1	2
-6	2	-5	6	7	-8	3

Subtract Integers - Chain Reaction

$^{-}15$ C 4 – 6	4 T $^{-}3 - (^{-}3)$	7 L $^{-}16 - (^{-}2)$	$^{-}1$ Z 3 – 9
$^{-}2$ A $^{-}2 - (^{-}5)$	0 M $^{-}5 - (^{-}13)$	$^{-}14$ O $^{-}35 - (^{-}24)$	$^{-}6$ Y $^{-}16 - (^{-}3)$
3 F $^{-}7 - (^{-}3)$	8 B $^{-}42 - (^{-}22)$	$^{-}11$ E $^{-}17 - (^{-}12)$	$^{-}13$ W $^{-}24 - 12$
$^{-}4$ N 8 – 4	$^{-}20$ I 9 – 2	$^{-}5$ J $^{-}3 - (^{-}2)$	$^{-}36$ D $^{-}8 - 7$

Key: C, A, F, N, T, M, B, I, L, O, E, J, Z, Y, W, D, back to C

Multiply Integers - Scavenger Hunt

72 A $3 \bullet {}^{-}10$	$^{-}72$ F $^{-}7 \bullet 7$	$^{-}6$ C $^{-}5 \bullet {}^{-}6$	32 L $^{-}5 \bullet 9$
$^{-}30$ G $6 \bullet {}^{-}4$	$^{-}49$ B $^{-}6 \bullet {}^{-}9$	30 N $^{-}8 \bullet {}^{-}7$	$^{-}45$ I $^{-}3 \bullet 9$
$^{-}24$ K $^{-}8 \bullet 8$	54 M $^{-}3 \bullet {}^{-}4$	56 H $4 \bullet {}^{-}8$	$^{-}27$ E $9 \bullet {}^{-}4$
$^{-}64$ D $^{-}9 \bullet 8$	12 P $^{-}2 \bullet 3$	$^{-}32$ Q $^{-}4 \bullet {}^{-}8$	$^{-}36$ O $^{-}12 \bullet {}^{-}6$

Key: A, G, K, D, F, B, M, P, C, N, H, Q, L, I, E, O, back to A

Divide Integers - Mystery Square

18 5 E $-42 \div -6$ $6 \div -2$	-40 7 Z $121 \div 11$ $-6 \div -2$	-11 11 F $81 \div -3$ $-63 \div 9$	1 -27 L $42 \div 2$ $-18 \div -9$
-3 -20 G $66 \div -3$ $8 \div -4$	3 -22 A $-108 \div -9$ $5 \div -5$	-7 12 B $64 \div 4$ $-12 \div -3$	2 16 K $-96 \div 6$ $-56 \div -7$
-2 -23 C $70 \div -7$ $144 \div -12$	-1 -10 M $-25 \div 5$ $-32 \div 4$	4 -5 S $50 \div 5$ $54 \div 6$	8 10 I $-39 \div 3$ $-72 \div 8$
-12 -26 J $18 \div 3$ $-28 \div -2$	-8 6 P $40 \div -10$ $50 \div 2$	9 -4 N $36 \div -6$ $72 \div 2$	-9 -6 Y $-60 \div 2$ $80 \div 2$

KEY – Diagonal spells EASY.

Review Integers – Integer Card Game - **Page 1 of 2**

Materials: Deck of cards, score sheet

How to Play:

1. Give the score sheet to the person selected as the scorekeeper. This person should put each player's name on the score sheet.

2. The oldest person should deal first. Then, for each hand, the dealer will be the next person to the left of the previous dealer.

3. Red cards are negative. **(hearts and diamonds)**
   Black cards are positive. **(spades and clubs)**

4. Numbered cards carry the value of the number on them.
   Example: 4 of hearts = $^{-}4$ 10 of clubs = $^{+}10$

5. Aces = 1 Jacks = 11 Queens = 12 Kings = 0

6. The dealer decides how many cards to deal. (no more than 6) The dealer also decides which operation to use (add, subtract, multiply) before dealing the cards. Division does not lend itself to this game.
   Example: If the dealer calls 3 cards with addition, and someone gets the Jack of hearts, 2 of clubs, and 5 of diamonds, this person's hand is worth $^{-}11 + ^{+}2 + ^{-}5$ or $^{-}9 + ^{-}5 = ^{-}14$ points.

7. The object of the game is to have the highest number of points. (A player may subtract two cards in any order, which ever is better for that person.)

8. At the end of each hand, the scorekeeper should record the name of the person who had the highest points for that hand in the "WINNER" Column.

9. At the end of the game, the players of each group are to add all of the hands for each person to see who is the "BIG WINNER" for their group.

Helpful Hints and Tips:

- Play one round teacher versus students to review rules.
- Use only 3 cards the first time to play the game.
- Start with addition to understand the rules.

Review Integers – Integer Card Game - **Page 2 of 2**

ROUND	# OF CARDS	Add, Subtract, or Multiply	Player #1 _____	Player #2 _____	Player #3 _____	Player #4 _____	WINNER
1							
2							
3							
4							
5							
6							
7							
8							
GAME TOTALS							

Real-World Applications with Rational Numbers – Scavenger Hunt
Page 1 of 4

$18\frac{3}{4}$ hours P Karla is training for a triathlon. On Monday she swam $\frac{3}{4}$ mile, jogged $2\frac{2}{4}$ miles, and bicycled $5\frac{1}{4}$ miles. What was the number of miles she exercised on Monday?	70.4 miles B Christina went shopping and bought a new shirt for \$15.47, a pair of shoes for \$14.99, and a belt for \$6.02. How much money did she spend all together?
$8\frac{1}{2}$ miles K One Tuesday evening in New York, the temperature was $^{-}15°F$. The weather changed the next two days, and by Thursday evening the temperature had risen 42 degrees. What was the temperature on Thursday evening?	\$36.48 F Kimberly has a rope that is $1\frac{7}{8}$ yd long. She decides to cut the rope so she can make a jump rope to play with outside. She plans to give any leftover rope to her younger brother. Kimberly decides to cut a jump rope that is $1\frac{1}{2}$ yd long. How much rope will be left unused?

Key: P, K, L, D, M, H, E, N, B, F, G, R, A, S, J, C, back to P

Real-World Applications with Rational Numbers – Scavenger Hunt
Page 2 of 4

27°F L Ginny is building a small bird house. She begins with a board that is $3\frac{1}{2}$ feet long. Ginny plans to cut the board into pieces that are $\frac{1}{4}$ ft long. How many pieces will she have when she is finished cutting the original board?	$\frac{3}{8}$ of a yard G Wanda and Liam are making treat bags for a birthday party. They put 2 pencils, 2 erasers, 4 pieces of candy, and a toy in each treat bag. The pencils they bought cost $0.25 each, the erasers cost $0.30 each, the candies cost $0.45 each, and the toys cost $0.75 each. How much did they spend on each treat bag?
14 pieces D Joel bought 16 gallons of gas for $55.68. What was the unit price for the gas?	$3.65 R Teresa, Evelyn, and Todd are on the track team. They all competed in the long jump. On the first jump, Teresa jumped $6\frac{1}{4}$ ft. Evelyn and Todd both jumped $5\frac{3}{4}$ ft. What is the total distance of all 3 members after the first jump?

Key: P, K, L, D, M, H, E, N, B, F, G, R, A, S, J, C, back to P

Real-World Applications with Rational Numbers – Scavenger Hunt
Page 3 of 4

$3.48 per gallon M Jason decided to do some landscaping in his backyard. The length of the yard is 20.8 yards and the width is 16.4 yards. What is the area of the yard?	$17\frac{3}{4}$ feet A Felix went shopping at the hardware store. He bought light bulbs for $14.95, nails for $2.39, a hammer for $7.99, and a stepladder for $28.43. If he started with $100.00 and the sales tax was 7.5%, how much change should he receive?
341.12 square yards H The local bowling alley offers a Saturday afternoon student special. The price per game is $5.25, and the shoe rental is $1.00 off the regular price of $3.75. If Tom spent $18.50 bowling, how many games did he bowl?	$42.21 S Joe filled the gas tank in his car with $12\frac{3}{8}$ gallons of gas. Then he filled a large gas can with $3\frac{1}{2}$ gallons of gas. How much gas did Joe get all together?

Key: P, K, L, D, M, H, E, N, B, F, G, R, A, S, J, C, back to P

Real-World Applications with Rational Numbers – Scavenger Hunt
Page 4 of 4

3 games E Bethany went to the store. She had $27.94 in her purse at the beginning of her shopping trip. She bought pencils for $2.29, notebook paper for $1.15, markers for $4.89, and two erasers for $0.79 each. How much money does she have left?	$15\frac{7}{8}$ gallons of gas J Susanah went to dinner with some friends. She ordered an appetizer of mozzarella sticks for $5.79, an entrée of steak and rice for $12.45, and a soda for $1.49. If she plans to leave an 18% tip before tax, how much tip will she leave?
$18.03 N Shelly is training to run a 26-mile marathon. Last week she ran every day. On Monday she ran 7.8 miles, on Tuesday she ran 8.3 miles, on Wednesday she ran 10.4 miles, on Thursday she ran 7.8 miles, on Friday she ran 8.0 miles, on Saturday she ran 18.6 miles, and on Sunday she ran 9.5 miles. What was the total number of miles she ran last week?	$3.55 C Sally spent $3\frac{3}{4}$ hours playing basketball with her friends each week for 5 weeks. At the end of the 5 weeks, how much time had she spent playing basketball?

Key: P, K, L, D, M, H, E, N, B, F, G, R, A, S, J, C, back to P

Properties of Operations with Expressions – Chain Reaction

$14x + 32$ I What is the simplified form of this expression? $(3x + 5) + (4x + 8)$	$9x + 18$ E What is the expanded form of this expression? $3(12x + 4)$	$15x - 60$ N Factor the following expression: $18x + 9$	$15(x + 1)$ G What is the simplified form of this expression? $(8x + 5) + (3x + 12)$
$7x + 13$ F What is the expanded form of this expression? $6(x + 4)$	$36x + 12$ M Factor the following expression: $25x + 100$	$9(2x + 1)$ C What is the simplified form of this expression? $7x + 14 + 4x + 5$	$11x + 17$ J What is the expanded form of this expression? $9(x + 4)$
$6x + 24$ L Factor the following expression: $9x - 27$	$25(x + 4)$ K What is the simplified form of this expression? $3x + 7 - 2x - 10$	$11x + 19$ D What is the expanded form of this expression? $10(x + 8)$	$9x + 36$ R Factor the following expression: $12x + 48$
$9(x - 3)$ A What is the simplified form of this expression? $12x + 14 - 3x + 4$	$x - 3$ B What is the expanded form of this expression? $15(x - 4)$	$10x + 80$ P Factor the following expression: $15x + 15$	$12(x + 4)$ H What is the simplified form of this expression? $(8x + 12) + (6x + 20)$

Key I, F, L, A, E, M, K, B, N, C, D, P, G, J, R, H, back to I

Writing Equivalent Expressions for Real-World Applications – Scavenger Hunt - Page 1 of 2

$P = 2(4 + 3)$ B A sweater has an original purchase price of p. All the sweaters in the store are on sale for the weekend at a discount of 20%. To determine the cost of one sweater, we can use the expression $p - 0.2p$. What is another way to express the cost of the discounted sweater?	$a = \frac{1}{2}(b + c)$ A Tina is working on a perimeter problem for her math class. She knows that she can use the formula $P = 2l + 2w$ to find the perimeter of any rectangle. What is another way to write the formula?	$P = 2(12 + 9)$ S The bicycle shop is having a sale where every bike in the shop is 10 percent off. The following equation can be used to determine the price of any bike: $b - 0.1b = 0.9b.$ What does this mean?	$p = 7.8(r + s)$ R Gina has been working at her job at the mall for 6 months and received a raise. The following equation shows her new pay rate per hour: $h + 0.07h = 1.07h$ What does this mean?
$0.8p$ G Melissa charges $7 per hour for babysitting. She also does yard work for $7 per hour. She is using the following equation to determine how much money she earned last week $T = 7b + 7y.$ What is another way to write the equation?	$P = 2(l + w)$ F The local movie theater is offering a discounted cost for all movies before 4:00 pm. The cost of a discounted ticket can be found using the equation below: $t - 0.20t = 0.80t$ What does this mean?	Multiply the cost of any bike times 0.9. C The school store sells red pencils and blue pencils. The pencils each cost 30 cents. Sam wrote the following equation to determine the total amount of money at the end of the week that was made selling pencils. $T = 0.3r + 0.3b$ What is another way to represent the equation?	Multiply the hourly rate by 1.07. T What is another way to represent the equation below? $M = 5s + 5p$

Key B, G, E, D, A, F, P, Z, S, C, M, H, R, T, W, L, back to B

Writing Equivalent Expressions for Real-World Applications – Scavenger Hunt - Page 2 of 2

$T = 7(b + y)$ E At the local department store, all televisions are on sale for 25% off the regular price. To determine the sale cost of any television, we can use the expression $t - 0.25t$. What is another way to express the discounted cost of any television?	The discounted cost of a ticket is $0.80t$. P What is another way to represent the equation below? $r = 1.3a + 1.3b$	$T = 0.3(r + b)$ M A video game has a cost of g. At the mall, the video game store has a sale where all games are 15% off. To determine the cost of one video game, we can use the expression $g - 0.15g$. What is another way to express the discounted cost of any video game?	$M = 5(s + p)$ W The cost of new tires for Mr. Peterson's car can be determined using the equation $t + 0.08t$, which includes the price of the tires plus the tax. What is another way to express the total cost of the tires plus tax?
$0.75t$ D What is another way to represent the equation below? $a = \frac{1}{2}b + \frac{1}{2}c$	$r = 1.3(a + b)$ Z A rectangle has a length of 12 feet and a width of 9 feet. The following formula can be used to determine the perimeter: $P = 2(12) + 2(9)$. What is another way to write the equation?	$0.85g$ H What is another way to represent the equation below? $p = 7.8r + 7.8s$	$1.08t$ L A rectangle has a length of 4 inches and a width of 3 inches. Pam is trying to determine the perimeter of the rectangle and uses the formula: $P = 2(4) + 2(3)$ What is another way to write the equation?

Key B, G, E, D, A, F, P, Z, S, C, M, H, R, T, W, L, back to B

One-Step Equations with Integers - Mystery Square

$x = -20$ $x = -8$ B $2x = -12$ $\frac{x}{2} = 1$	$x = 20$ $x = -6$ C $3x = 21$ $\frac{-28}{x} = 7$	$x = 9$ $x = 7$ H $3x = 42$ $\frac{x}{1} = 3$	$x = -12$ $x = 14$ V $-5x = 90$ $\frac{x}{-4} = 4$
$x = 2$ $x = 10$ F $2x = -18$ $\frac{x}{5} = -2$	$x = -4$ $x = -9$ A $5x = -15$ $\frac{35}{x} = 7$	$x = 3$ $x = -3$ L $4x = -20$ $\frac{x}{3} = 4$	$x = -16$ $x = -5$ E $4x = 100$ $\frac{x}{3} = -8$
$x = -10$ $x = 6$ I $3x = 54$ $\frac{x}{4} = 2$	$x = 5$ $x = 18$ M $4x = 64$ $\frac{28}{x} = -4$	$x = 12$ $x = 16$ N $2x = 30$ $\frac{x}{2} = 2$	$x = -24$ $x = 15$ P $8x = 240$ $\frac{x}{5} = -6$
$x = 8$ $x = -11$ J $4x = -60$ $\frac{x}{25} = 3$	$x = -7$ $x = -15$ D $3x = 96$ $\frac{x}{12} = 6$	$x = 4$ $x = 32$ G $2x = 72$ $\frac{x}{3} = 11$	$x = -30$ $x = 36$ K $6x = 144$ $\frac{x}{6} = 9$

KEY – Diagonal spells BANK.

Two-Step Equations with Integers - Scavenger Hunt

$x = 11$ P $2x + {}^{-}7 = 19$	$x = 3$ C $\frac{x}{7} + 9 = {}^{-}12$	$x = 7$ O $4x + {}^{-}3 = {}^{-}39$	$x = 90$ A $\frac{x}{4} + 8 = 20$
$x = 13$ J ${}^{-}3x + 12 = 36$	$x = {}^{-}147$ B ${}^{-}7x - 13 = 15$	$x = {}^{-}9$ M $\frac{x}{3} + 12 = {}^{-}17$	$x = 48$ D ${}^{-}12x + 15 = 75$
$x = {}^{-}8$ F $\frac{x}{{}^{-}5} - 2 = 6$	$x = {}^{-}4$ S $8x - 12 = 20$	$x = {}^{-}87$ G ${}^{-}9x + 13 = 31$	$x = {}^{-}5$ K $\frac{x}{{}^{-}6} - 5 = {}^{-}2$
$x = {}^{-}40$ L $10x + {}^{-}5 = 25$	$x = 4$ E $5x - 21 = 14$	$x = {}^{-}2$ N $\frac{x}{9} - 9 = 1$	$x = {}^{-}18$ H $6x + 15 = 81$

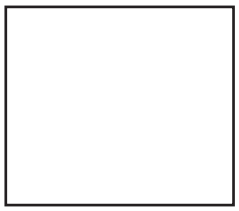
Key: P, J, F, L, C, B, S, E, O, M, G, N, A, D, K, H, back to P

One- and Two-Step Inequalities - Mystery Square

$x < 17$ $x > 12$ L $2x + 1 < 7$ $\frac{x}{7} < 2$	$x > 21$ $x < 3$ F $10x > 40$ $\frac{x}{4} - 3 > 1$	$x < -14$ $x > 4$ B $6x > 12$ $\frac{x}{2} < 8$	$x > -18$ $x > 2$ C $9x + 4 > 31$ $\frac{x}{1} + 3 > 8$
$x < 14$ $x > 15$ R $7x > 7$ $\frac{x}{6} - 1 < 5$	$x > 16$ $x > 1$ A $3x + 2 < 14$ $\frac{x}{4} > -10$	$x < 16$ $x < 4$ E $8x + 7 > -33$ $\frac{x}{3} + 5 < 9$	$x > 5$ $x > -5$ T $12x - 1 < 11$ $\frac{x}{5} > 5$
$x < 36$ $x < 15$ S $4x + 3 < -5$ $\frac{x}{6} > -6$	$x > -40$ $x < -2$ G $8x > -24$ $\frac{x}{2} + 6 < 1$	$x < 12$ $x > -3$ N $6x - 7 < -13$ $\frac{x}{10} < -2$	$x > 25$ $x < -1$ M $5x < -12$ $\frac{x}{5} - 6 < -9$
$x > -36$ $x < -22$ O $7x > -42$ $\frac{x}{8} - 12 < -15$	$x < -10$ $x > -6$ J $5x + 4 < -31$ $\frac{x}{6} > -18$	$x < -20$ $x < -7$ Z $9x > -36$ $\frac{x}{8} + 1 < -1$	$x < -15$ $x > -4$ D $11x - 4 < 18$ $\frac{x}{3} + 1 < -1$

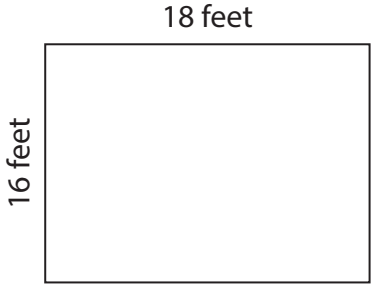
KEY – Diagonal spells LAND.

Scale Drawings - Scavenger Hunt - Page 1 of 4

8 centimeters H On a treasure hunt map, the treasure is 24 cm from the starting point. If the scale for the map is 1 cm = 5 feet, how far is the starting point from the treasure?	90 inches by 108 inches B If the scale is 2 centimeters = 6 meters, and a garden is 30 meters by 36 meters, what would be the dimensions of a scale drawing of the garden?
120 feet R 3.5 cm  The square shown above is being used for a model of a clubhouse for Mike and his friends. If the scale is 1 cm = 2 feet, what is the perimeter of the clubhouse?	10 cm by 12 cm Z If the scale is 1 inch = 4 feet, what would be the actual dimensions of a model ship measuring 7 inches by 10 inches?

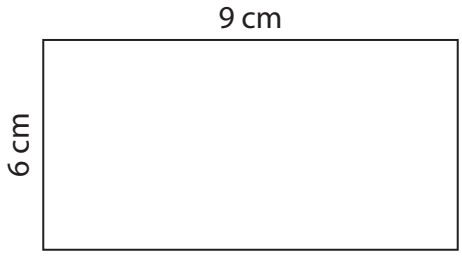
Key: H, R, D, P, M, F, S, L, B, Z, K, E, C, N, A, G, back to H

Scale Drawings - Scavenger Hunt - Page 2 of 4

28 feet D A field measures 100 meters by 75 meters. If a scale drawing were created using a scale of 1 centimeter = 25 meters, what would the dimensions be for the field in the drawing?	28 feet by 40 feet K A line measures $2\frac{1}{2}$ inches long. The scale is 1 inch = 12 feet. How many feet would the line represent using this scale?
4 cm by 3 cm P  A dog lot measures 18 feet by 16 feet. If a scale drawing were created using a scale of 0.5 centimeter = 2 feet, what would the dimensions be for the dog lot in the drawing?	30 feet long E The length of a highway is 600 miles long. The scale is 0.5 inch = 50 miles. What is the length in inches of the line to represent the highway using this scale?

Key: H, R, D, P, M, F, S, L, B, Z, K, E, C, N, A, G, back to H

Scale Drawings - Scavenger Hunt - Page 3 of 4

4.5 cm by 4 cm M The rectangular drawing of a garden has a scale of 1 inch = 8 feet. If the drawing of the garden is 5 inches by 3.5 inches, what are the dimensions of the garden?	6 inches C A room measures 36 feet by 18 feet. If a scale drawing were created using a scale of 2 cm = 12 feet, what would the dimensions be for the room in the drawing?
40 feet by 28 feet F A backyard measures 250 feet by 120 feet. A scale drawing of the backyard is 12.5 inches in length and 6 inches wide. What is the scale of the drawing?	6 cm by 3 cm N  If 2 cm = 5 m, what would the actual dimensions of the room below be in meters?

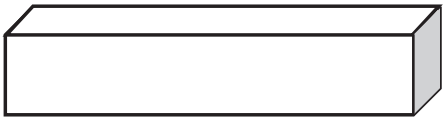
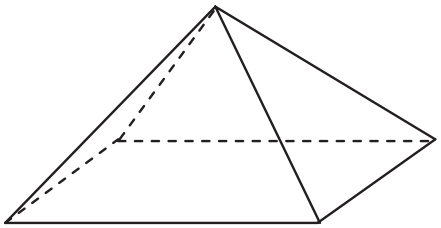
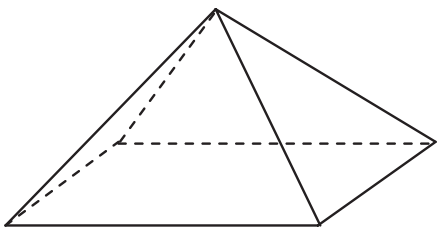
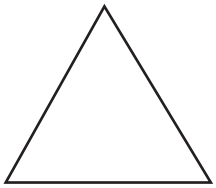
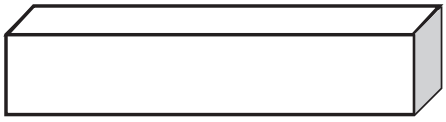
Key: H, R, D, P, M, F, S, L, B, Z, K, E, C, N, A, G, back to H

Scale Drawings - Scavenger Hunt - Page 4 of 4

1 inch = 20 feet S The garden is 66 ft by 42 ft in size. A drawing is made of the garden. The drawing shows the garden length of 22 centimeters and a width of 14 centimeters. What is the scale of the drawing?	22.5 meters by 15 meters A A lake in Florida is 144 ft across. If you drew a map of this lake and a half inch was equal to 6 feet, what would be the length of the line to represent the width of the lake?
1 cm = 3 feet L If the scale is 1 inch = 18 inches, what would be the actual dimensions of a 5 inch by 6 inch poster?	12 inches G It is about 240 miles from Miami to Orlando. The scale is 1 centimeter = 30 miles. What is the length in centimeters of the line to represent the number of miles from Miami to Orlando using this scale?

Key: H, R, D, P, M, F, S, L, B, Z, K, E, C, N, A, G, back to H

Plane Sections of 3-D Figures – Chain Reaction - Page 1 of 2

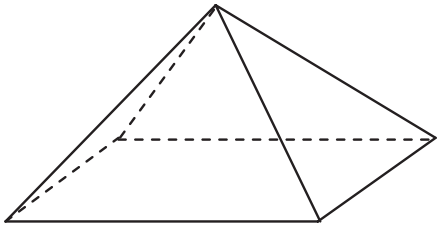
square A Describe the shape of the face when a rectangular prism is cut with a plane parallel to the base. 	parallelogram C Draw a picture of the 2-dimensional shape when a rectangular pyramid is cut with a plane that is perpendicular to the base and passes through the vertex. 
rectangle F Draw a picture of the 2-dimensional shape when a rectangular pyramid is cut with a plane parallel to the base. 	 B Draw a picture of the face when a rectangular prism is cut with a plane at an angle to the base. 

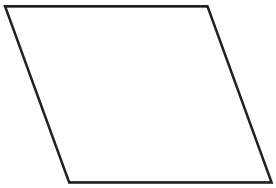
Key: A, F, D, L, C, B, H, M, back to A

Plane Sections of 3-D Figures – Chain Reaction - Page 2 of 2

D

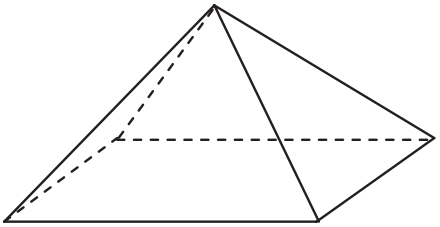
Draw a representation of the shape that results when a perpendicular plane passes vertically through the shape, not through the vertex.



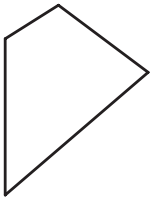


H

Describe the shape that results when a perpendicular plane passes vertically though the shape, not through the vertex.

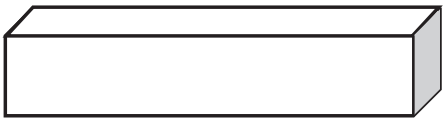


trapezoid



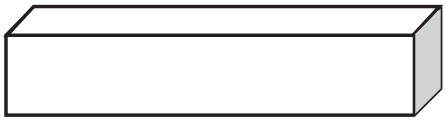
L

Describe the shape of the face when a rectangular prism is cut with a plane at an angle to the base.



M

Describe the shape of the face when a rectangular prism is cut with a plane perpendicular to the base.



Key: A, F, D, L, C, B, H, M, back to A

Circumference of a Circle - Chain Reaction - Use 3.14 for π and round to the nearest hundredth.

C ≈ 40.82 cm G What is the circumference of a circle with a radius of 3 ft?	C ≈ 12.56 in. A What is the circumference of a circle with a diameter of 2 km?	C ≈ 15.70 m H What is the circumference of a circle with a radius of 6 yd?	C ≈ 56.52 km Z What is the circumference of a circle with a diameter of 7 m?
C ≈ 18.84 ft K What is the circumference of a circle with a radius of 4 cm?	C ≈ 6.28 km I What is the circumference of a circle with a diameter of 3 ft?	C ≈ 37.68 yd E What is the circumference of a circle with a radius of 7 in.?	C ≈ 21.98 m W What is the circumference of a circle with a diameter of 9 in.?
C ≈ 25.12 cm C What is the circumference of a circle with a radius of 5 m?	C ≈ 9.42 ft B What is the circumference of a circle with a diameter of 17 cm?	C ≈ 43.96 in. Q What is the circumference of a circle with a radius of 8 cm?	C ≈ 28.26 in. X What is the circumference of a circle with a diameter of 11 m?
C ≈ 31.4 m L What is the circumference of a circle with a radius of 2 inches?	C ≈ 53.38 cm F What is the circumference of a circle with a diameter of 5 m?	C ≈ 50.24 cm T What is the circumference of a circle with a radius of 9 km?	C ≈ 34.54 m S What is the circumference of a circle with a diameter of 13 cm?

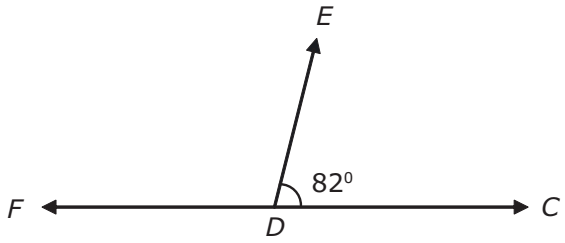
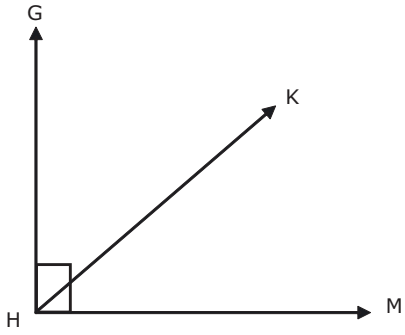
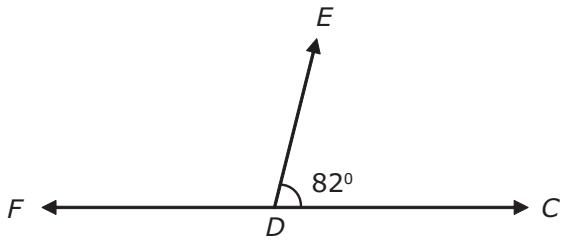
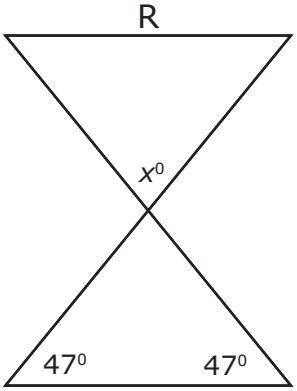
Key G, K, C, L, A, I, B, F, H, E, Q, T, Z, W, X, S, back to G

Area of a Circle - Scavenger Hunt - Use 3.14 for π and round to the nearest hundredth.

$A \approx 132.67\ cm^2$ H What is the area of a circle with a radius of 3 m?	$A \approx 12.56\ m^2$ A What is the area of a circle with a diameter of 2 in.?	$A \approx 19.63\ ft^2$ G What is the area of a circle with a radius of 6 in.?	$A \approx 254.34\ m^2$ Z What is the area of a circle with a diameter of 7 cm?
$A \approx 28.26\ m^2$ K What is the area of a circle with a radius of 4 cm?	$A \approx 3.14\ in.^2$ I What is the area of a circle with a diameter of 3 yd?	$A \approx 113.04\ in.^2$ E What is the area of a circle with a radius of 7 cm?	$A \approx 38.47\ cm^2$ W What is the area of a circle with a diameter of 9 km?
$A \approx 50.24\ cm^2$ C What is the area of a circle with a radius of 5 ft?	$A \approx 7.07\ yd^2$ B What is the area of a circle with a diameter of 15 km?	$A \approx 153.86\ cm^2$ Q What is the area of a circle with a radius of 8 yd?	$A \approx 63.59\ km^2$ X What is the area of a circle with a diameter of 11 ft?
$A \approx 78.5\ ft^2$ T What is the area of a circle with a radius of 2 m?	$A \approx 176.63\ km^2$ F What is the area of a circle with a diameter of 5 ft?	$A \approx 200.96\ yd^2$ L What is the area of a circle with a radius of 9 m?	$A \approx 94.99\ ft^2$ S What is the area of a circle with a diameter of 13 cm?

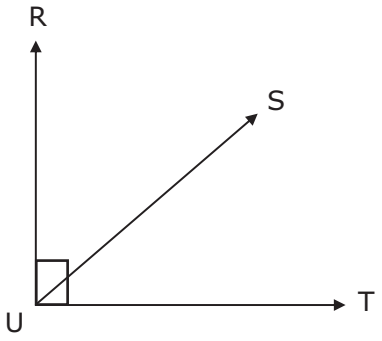
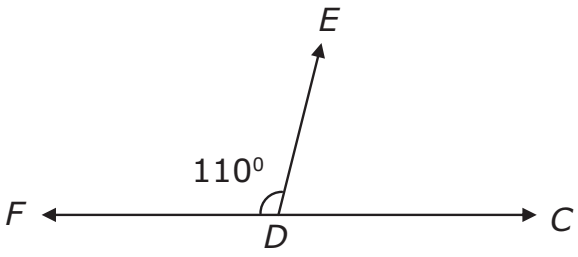
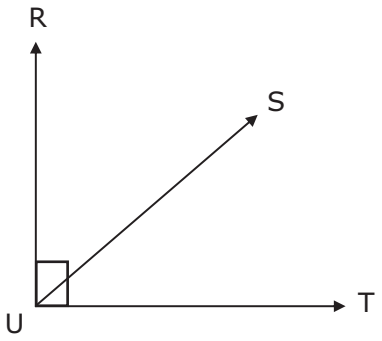
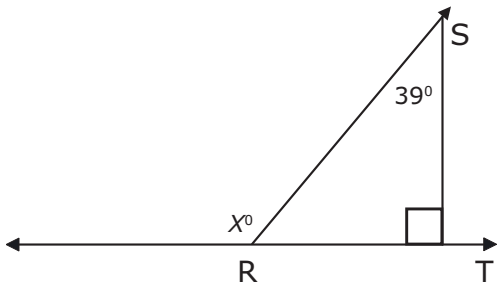
Key H, K, C, T, A, I, B, F, G, E, Q, L, Z, W, X, S, back to H

All about Angles – Scavenger Hunt - Page 1 of 4

48°	42°
What is the measure of Angle FDE?	Describe the relationship between Angle *GHK* and *KHM*.
F	A
	
98°	They are complementary angles.
Angle *FDE* and Angle *CDE* are supplementary angles. What is the total measure of these two angles?	Find the measure of Angle *x*.
T	R
	

Key: F, T, G, S, H, P, L, N, A, R, B, Q, M, C, D, K, back to F

All about Angles – Scavenger Hunt - Page 2 of 4

180° Angle *RUS* and Angle *SUT* are complementary angles. What is the total measure of these two angles? G  	86° What is the measure of Angle *EDC*? B 
90° The measure of Angle *SUT* is 41°. What is the measure of Angle *RUS*? S  	70° What is the measure of Angle *x*? Q 

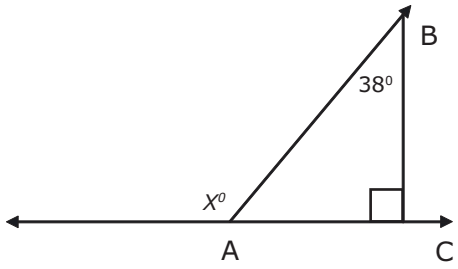
Key: F, T, G, S, H, P, L, N, A, R, B, Q, M, C, D, K, back to F

All about Angles – Scavenger Hunt - Page 3 of 4

49°

H

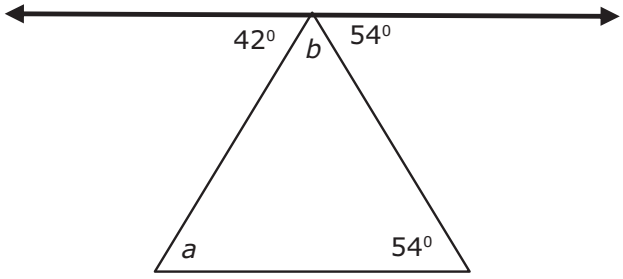
What is the measure of Angle *x*?



129°

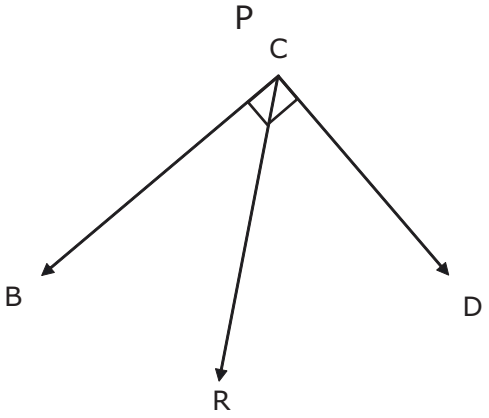
M

What is the measure of Angle *b*?



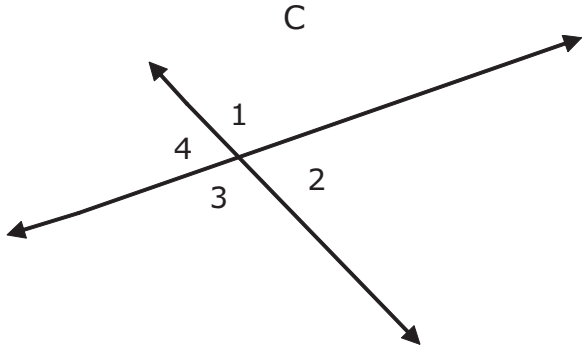
128°

Angle *BCR* has a measure of 40°.
What is the measure of Angle *RCD*?



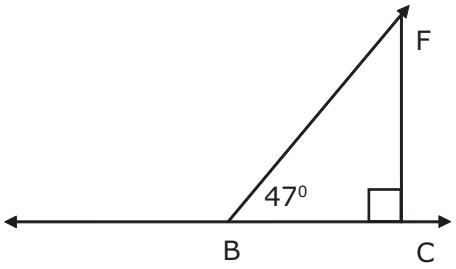
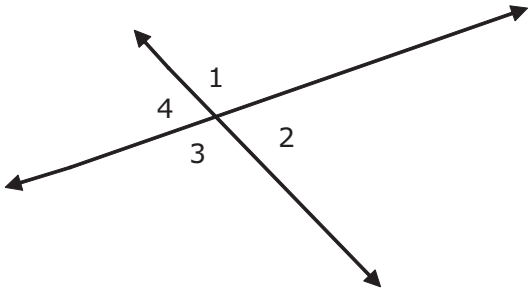
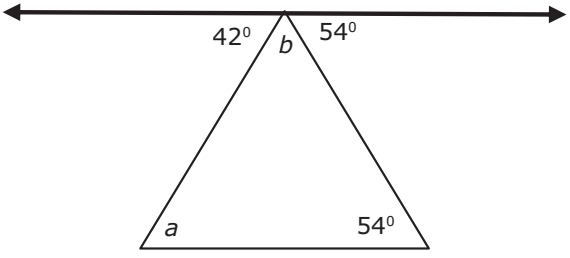
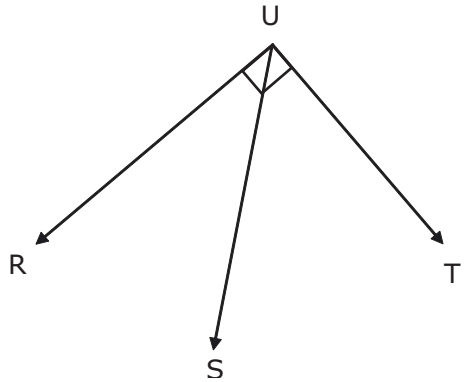
84°

Describe the relationship between Angle 2 and Angle 4.



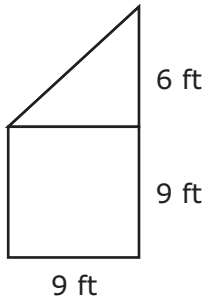
Key: F, T, G, S, H, P, L, N, A, R, B, Q, M, C, D, K, back to F

All about Angles – Scavenger Hunt - Page 4 of 4

50° L What is the measure of Angle *BFC*?  	They are vertical angles and are congruent. D What is the relationship between Angle 1 and Angle 2? 
43° N What is the measure of Angle *a*?  	They are adjacent angles and have a total measure of 180°. K The measure of Angle SUT is 42°, what is the measure of Angle RUS? 

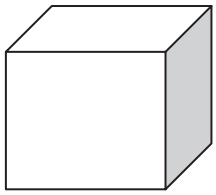
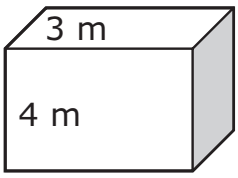
Key: F, T, G, S, H, P, L, N, A, R, B, Q, M, C, D, K, back to F

Real-World Applications Involving Area, Volume, and Surface Area – Chain Reaction - Page 1 of 4

18 centimeters D A parallelogram has a base of 12 cm and a perpendicular height of 4 cm. What is the area of the parallelogram?	592 cm^2 F What is the area of the figure below? 
48 cm^2 P Calculate the volume of a prism with the following dimensions: l = 2 cm w = 10 cm h = 8 cm	108 square feet H A rectangle has an area of 128 square units. The length of the rectangle is 16 units. What is the width of the rectangle?

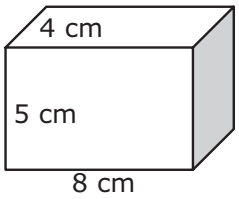
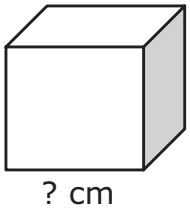
Key: D, P, N, C, A, L, S, Q, F, H, K, T, M, B, R, Z, back to D

Real-World Applications Involving Area, Volume, and Surface Area – Chain Reaction - Page 2 of 4

160 cubic centimeters N  3 inches What is the surface area of the cube?	8 units K A parallelogram has an area of 84 centimeters squared and a base of 20 cm. What is the perpendicular height of the parallelogram?
54 inches^2 C What is the surface area of a prism with the following dimensions? length = 12 in. width = 8 in. height = 4 in.	4.2 cm T A prism has a volume of 84 cubic meters. What is the length of the base of the prism? 

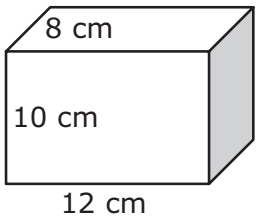
Key: D, P, N, C, A, L, S, Q, F, H, K, T, M, B, R, Z, back to D

Real-World Applications Involving Area, Volume, and Surface Area – Chain Reaction - Page 3 of 4

352 in.^{2} A What is the surface area of the prism?  	7 meters M What is the volume of a prism with the following dimensions? length = 20 in. width = 9 in. height = 12 in.
184 cm^2 L A rectangular prism has a volume of 363 cubic feet. The area of the base is 121 square feet. What is the height of the prism?	2,160 inches^3 B  What is the measure of the side length of a cube that has a volume of 1,000 cm^3?

Key: D, P, N, C, A, L, S, Q, F, H, K, T, M, B, R, Z, back to D

Real-World Applications Involving Area, Volume, and Surface Area – Chain Reaction - Page 4 of 4

3 feet S What is the volume of a prism with the following dimensions? length = 11 feet width = 6 feet height = 3 feet	10 cm R A square has an area of 81 square meters. What is the side measure of the square?
198 ft^3 Q What is the surface area of the rectangular prism below?  	9 meters Z A rectangle has an area of 486 square centimeters. The length of the rectangle is 27 centimeters. What is the width of the rectangle?

Key: D, P, N, C, A, L, S, Q, F, H, K, T, M, B, R, Z, back to D

Populations and Random Sampling – Scavenger Hunt - Page 1 of 4

225

A

A set that includes all the people in a group is known as a _____.

5%

E

An online DVD rental club has 800 members. The chart below shows the results from a survey of the members.

Random Sample of Favorite Movie Genre

Genre	Members
Action	14
Romance	12
Sci Fi	15
Drama	18
Comedy	11
Documentary	10

How large is the random sample?

population

S

There are 600 students at Smith Middle School. One of the math groups took a survey of the favorite color of students. The results are shown below.

Random Sample of Favorite Color

Color	Students
Red	15
Blue	10
Green	8
Black	12
Yellow	9
White	6

What is the total population of students at the school?

80

P

There are 500 7th grade students at Hawthorne Middle School. There are five choices for lunch every day. A survey was conducted about their favorite lunch.

Random Sample of Favorite Lunch

Lunch	Students
Pizza	20
Tacos	8
Chicken	15
Burgers	14
Salad	3

Based on the random sample, which two lunch choices seem to be chosen by about the same number of students?

Key: A, S, T, M, C, G, J, L, E, P, B, F, Z, K, D, H, back to A

Populations and Random Sampling – Scavenger Hunt - Page 2 of 4

600

T

An online DVD rental club has 800 members. The chart below shows the results from a survey of the members.

Random Sample of Favorite Movie Genre

Genre	Members
Action	14
Romance	12
Sci Fi	15
Drama	18
Comedy	11
Documentary	10

If the DVD rental club is using the information to order new DVDs, what percentage of the new movies should be Romance?

chicken and burgers

B

A group of people from a population that represents that population is known as a

_____.

15%

M

There are 600 students at Smith Middle School. One of the math groups took a survey of the favorite color of students. The results are shown below.

Color	Students
Red	15
Blue	10
Green	8
Black	12
Yellow	9
White	6

How large is the random sample?

sample

F

There are 500 7th grade students at Hawthorne Middle School. A survey was conducted about their favorite lunch.

Random Sample of Favorite Lunch

Lunch	Students
Pizza	20
Tacos	8
Chicken	15
Burgers	14
Salad	3

Based on the random sample, what percent of students chose tacos as their favorite lunch?
(Round to the nearest hundredth.)

Key: A, S, T, M, C, G, J, L, E, P, B, F, Z, K, D, H, back to A

Populations and Random Sampling – Scavenger Hunt - Page 3 of 4

60

C

A sample in which every person has an equal chance of being selected for that sample is called a _____ _____.

13.33%

Z

An online DVD rental club has 800 members. The chart below shows the results from a survey of the members.

Random Sample of Favorite Movie Genre

Genre	Members
Action	14
Romance	12
Sci Fi	15
Drama	18
Comedy	11
Documentary	10

Based on the random sample, how many members of the club would choose a Romance DVD?

random sample

G

There are 600 students at Smith Middle School. One of the math groups took a survey of the favorite color of students. The results are shown below.

Random Sample of Favorite Color

Color	Students
Red	15
Blue	10
Green	8
Black	12
Yellow	9
White	6

What percent of the students in the random sample chose red as their favorite color?

120

K

There are 500 7th grade students at Hawthorne Middle School. There are five choices for lunch every day. A survey was conducted about their favorite lunch.

Random Sample of Favorite Lunch

Lunch	Students
Pizza	20
Tacos	8
Chicken	15
Burgers	14
Salad	3

If the cafeteria serves 1200 meals, how many burgers can you predict would be served?

Key: A, S, T, M, C, G, J, L, E, P, B, F, Z, K, D, H, back to A

Populations and Random Sampling – Scavenger Hunt - Page 4 of 4

25%

J

An online DVD rental club has 800 members. The chart below shows the results from a survey of the members.

Random Sample of Favorite Movie Genre

Genre	Members
Action	14
Romance	12
Sci Fi	15
Drama	18
Comedy	11
Documentary	10

Which type of movie seems to be most popular with the members of the rental club?

280

D

Total Video Store Membership
800

Random Sample of Favorite Movie Genre

Genre	Members
Action	14
Romance	12
Sci Fi	15
Drama	18
Comedy	11
Documentary	10

If 1200 movies are rented in a week, use the random sample to predict how many drama movies would be rented.

Drama

L

There are 500 7th grade students at Hawthorne Middle School. There are five choices for lunch every day. A survey was conducted about their favorite lunch.

Random Sample of Favorite Lunch

Lunch	Students
Pizza	20
Tacos	8
Chicken	15
Burgers	14
Salad	3

What percent of the students in the random sample chose salad as their favorite lunch?

270

H

There are 600 students at Smith Middle School. One of the math groups took a survey of the favorite color of students. The results are shown below.

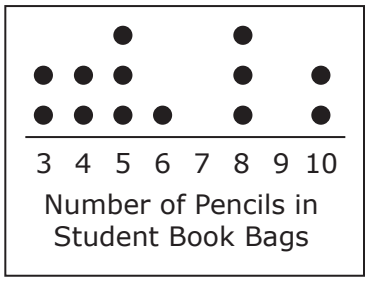
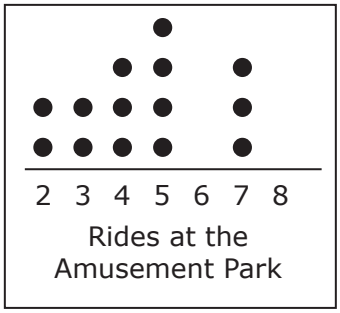
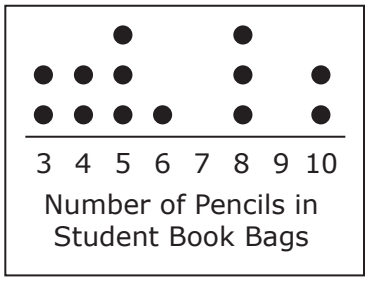
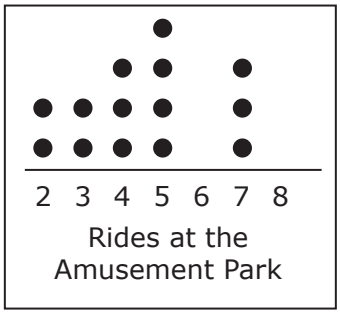
Random Sample of Favorite Color

Color	Students
Red	15
Blue	10
Green	8
Black	12
Yellow	9
White	6

If the school ordered 900 shirts, use the random sample to predict how many shirts should be red.

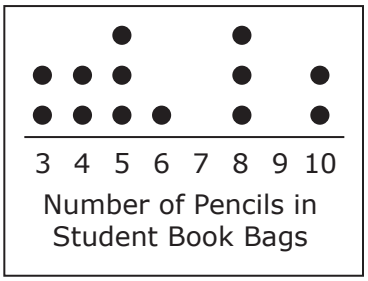
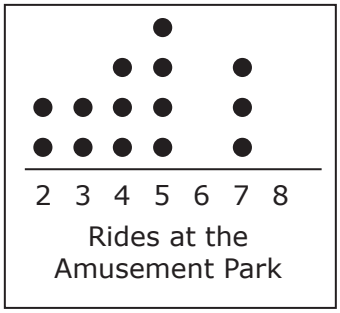
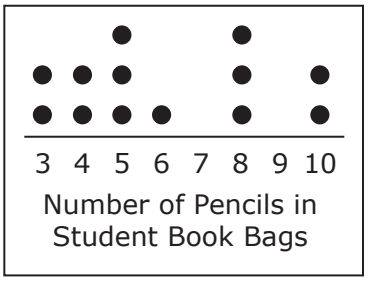
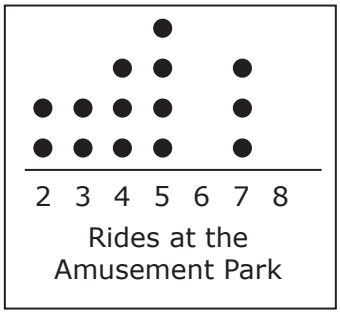
Key: A, S, T, M, C, G, J, L, E, P, B, F, Z, K, D, H, back to A

Measures of Center and Variability with Dot Plots – Chain Reaction - Page 1 of 4

1.3 G Mrs. James had students count the number of pencils in their book bags to use for a data lesson.  What is the total number of pencils in book bags?	1.5 M Sasha's math group collected data from students about how many rides they went on during a recent class trip to the amusement park.  What is the total number of rides for the students?
79 L Mrs. James had students count the number of pencils in their book bags to use for a data lesson.  What is the range of the data?	63 A Sasha's math group collected data from students about how many rides they went on during a recent class trip to the amusement park.  How many students were surveyed?

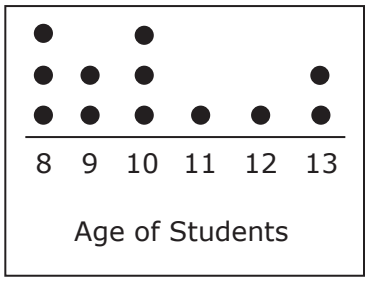
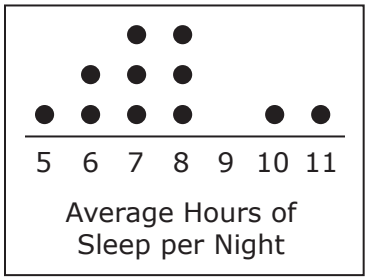
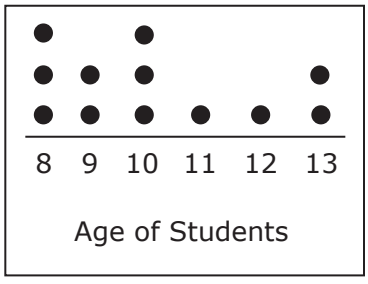
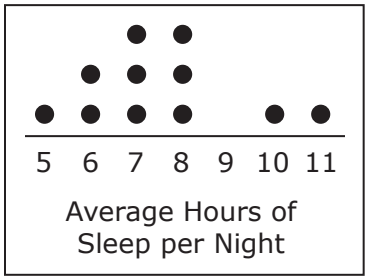
Key: G, L, N, C, H, Q, T, J, M, A, B, P, F, D, K, R, back to G

Measures of Center and Variability with Dot Plots – Chain Reaction - Page 2 of 4

7 N Mrs. James had students count the number of pencils in their book bags to use for a data lesson.  What is the mean of the data set? (Round to the nearest tenth.)	14 B Sasha's math group collected data from students about how many rides they went on during a recent class trip to the amusement park.  What is the mean of the data set? (Round to the nearest tenth.)
6.1 C Mrs. James had students count the number of pencils in their book bags to use for a data lesson.  What is greatest number of pencils found in a student's book bag?	4.5 P Sasha's math group collected data from students about how many rides they went on during a recent class trip to the amusement park.  What is the mean absolute deviation (MAD) of the data? (Round to the nearest tenth.)

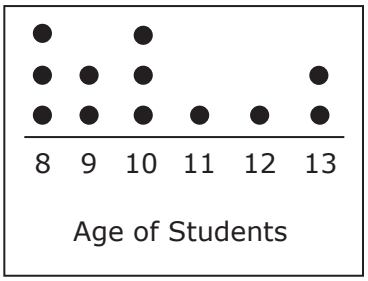
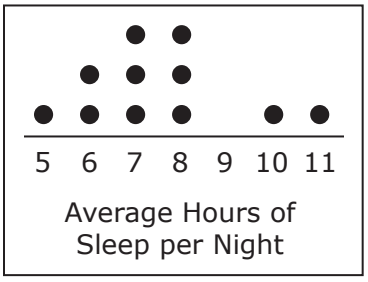
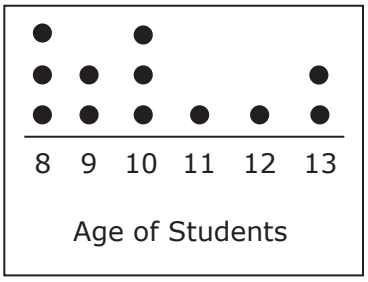
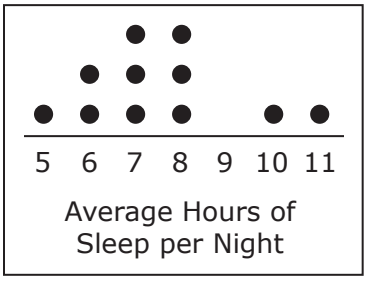
Key: G, L, N, C, H, Q, T, J, M, A, B, P, F, D, K, R, back to G

Measures of Center and Variability with Dot Plots – Chain Reaction - Page 3 of 4

10 H Terri's math group collected data about the ages of their brothers and sisters for the math lesson.  What is the total number of years represented on the dot plot?	1.4 F James worked with his math group to collect data from 11 students about how many hours they slept per night.  What is the total number of hours for the 11 students?
121 Q Terri's math group collected data about the ages of their brothers and sisters for the math lesson.  What is the range of the data?	83 D James worked with his math group to collect data from 11 students about how many hours they slept per night.  What is the range of the data?

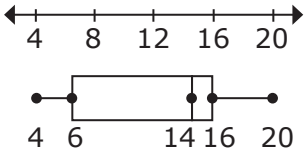
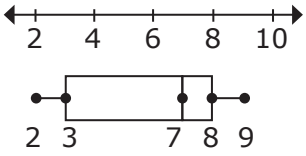
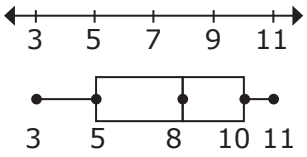
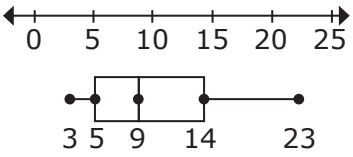
Key: G, L, N, C, H, Q, T, J, M, A, B, P, F, D, K, R, back to G

Measures of Center and Variability with Dot Plots – Chain Reaction - Page 4 of 4

5 T Terri's math group collected data about the ages of their brothers and sisters for the math lesson.  What is the mean of the data set? (Round to the nearest tenth.)	6 K James worked with his math group to collect data from 11 students about how many hours they slept per night.  What is the mean of the data set? (Round to the nearest tenth.)
10.1 J Terri's math group collected data about the ages of their brothers and sisters for the math lesson.  What is the mean absolute deviation (MAD) of the data? (Round to the nearest tenth.)	7.5 R James worked with his math group to collect data from 11 students about how many hours they slept per night.  What is the mean absolute deviation (MAD) of the data? (Round to the nearest tenth.)

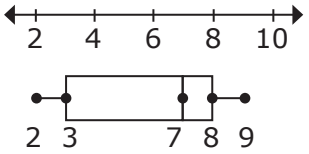
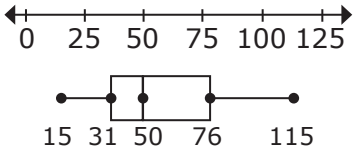
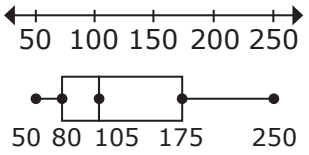
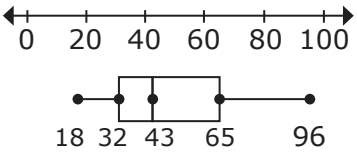
Key: G, L, N, C, H, Q, T, J, M, A, B, P, F, D, K, R, back to G

Measures of Center and Variability with Box Plots – Scavenger Hunt - Page 1 of 4

200 B **The Age of Kids Playing on the Slide**  What is the median age of the kids playing on the slide?	43 L **Left-Handed Students**  What is the value of Q3 of the data that is plotted on the box plot?
14 F **Number of Students on the Dance Team**  What is the maximum value for the number of students on the dance team?	8 S **Cars Sold this Month**  What is the maximum number of cars sold this month?

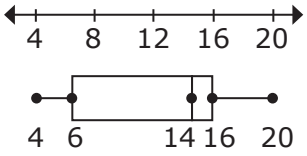
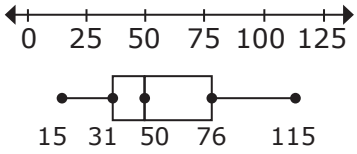
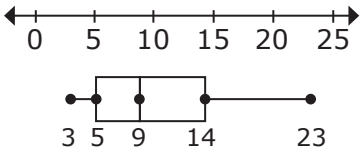
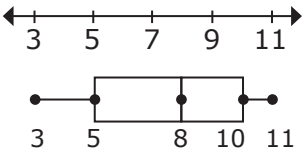
KEY: B, F, R, E, G, N, P, D, L, S, M, A, C, Q, K, H, back to B

Measures of Center and Variability with Box Plots – Scavenger Hunt - Page 2 of 4

11 R **Left-Handed Students**  What is the maximum value?	23 M **Mary's Typing Speed (WPM)**  What is the range of the data on the box plot?
9 E **Number of School Shirts Sold**  What is the value of Q3 of the data on the box plot?	100 A **Number of Hamburgers Sold at a Fundraiser**  What is the value of Q1 of the data on the box plot?

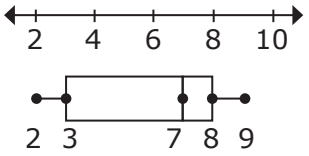
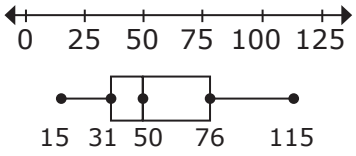
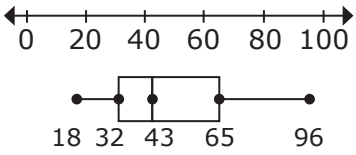
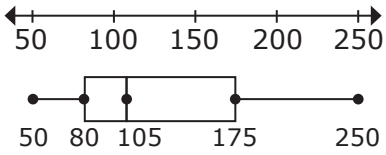
KEY: B, F, R, E, G, N, P, D, L, S, M, A, C, Q, K, H, back to B

Measures of Center and Variability with Box Plots – Scavenger Hunt - Page 3 of 4

175 G **Age of Kids Playing on the Slide**  What is the IQR (Interquartile Range) of the age of the students playing on the slide?	32 C **Mary's Typing Speed (WPM)**  What is the median of the number of words per minute Mary typed?
10 N **Cars Sold this Month**  What is the value of Q1 of the data on the box plot?	50 Q **Number of Students on the Dance Team**  What is the minimum value on the box plot that displays the data about the number of students on the dance team?

KEY: B, F, R, E, G, N, P, D, L, S, M, A, C, Q, K, H, back to B

Measures of Center and Variability with Box Plots – Scavenger Hunt - Page 4 of 4

5 P **Number of Points Scored at a Basketball Game**  What is the minimum number of points scored at the basketball game?	3 K **Number of Points Scored at a Basketball Game**  What is the IQR (interquartile range) of the data set?
2 D **Number of Hamburgers Sold at a Fundraiser**  What is the median number of hamburgers sold at a fundraiser?	45 H **Number of School Shirts Sold**  What is the range in the data set displayed on the box plot?

KEY: B, F, R, E, G, N, P, D, L, S, M, A, C, Q, K, H, back to B

Comparison of Measures of Center and Variability – Scavenger Hunt
- Page 1 of 4

The mean absolute deviation (MAD) of Group 1 and the mean absolute deviation (MAD) of Group 2 are separated by only 1.25. A The data below displays how many minutes of television were watched by two groups of students on a Saturday. Group 1 TV: 25, 40, 45, 30, 60, 45, 30, 60, 90, 30 Group 2 TV: 90, 120, 60, 30, 45, 150, 60, 120, 45, 60 List both data sets in order from least to greatest.	The mean absolute deviation (MAD) of Group 2 is about 2 times the mean absolute deviation (MAD) of Group 1. M The following data sets display the number of miles two different groups of teachers drove to school each day. Group 1 - 26, 41, 35, 23, 48, 35, 12, 8 Group 2 - 18, 21, 14, 51, 25, 36, 12, 47 List both data sets in order from least to greatest.
Group 1: 25, 30, 30, 30, 40, 45, 45, 60, 60, 90 Group 2: 30, 45, 45, 60, 60, 60, 90, 120, 120, 150 C The data below displays how many minutes of television were watched by two groups of students on a Saturday. Group 1 TV: 25, 40, 45, 30, 60, 45, 30, 60, 90, 30 Group 2 TV: 90, 120, 60, 30, 45, 150, 60, 120, 45, 60 What is the range of each set of data? How do the ranges compare?	Group 1: 8, 12, 23, 26, 35, 35, 41, 48 Group 2: 12, 14, 18, 21, 25, 36, 47, 51 E The following data sets display the number of miles two different groups of teachers drove to school each day. Group 1 - 26, 41, 35, 23, 48, 35, 12, 8 Group 2 - 18, 21, 14, 51, 25, 36, 12, 47 What is the range of each set of data? How do the ranges compare?

Key: A, C, R, K, N, P, B, G, M, E, D, F, L, T, S, W, back to A

Comparison of Measures of Center and Variability – Scavenger Hunt
- Page 2 of 4

Group 1: 65 Group 2: 120 The range for Group 2 is 55 more minutes than Group 1. R The data below displays how many minutes of television were watched by two groups of students on a Saturday. Group 1 TV: 25, 40, 45, 30, 60, 45, 30, 60, 90, 30 Group 2 TV: 90, 120, 60, 30, 45, 150, 60, 120, 45, 60 What is the median of each of the data sets?	Group 1: 40 Group 2: 39 The range for Group 2 is only 1 less mile than Group 1. D The following data sets display the number of miles two different groups of teachers drove to school each day. Group 1 - 26, 41, 35, 23, 48, 35, 12, 8 Group 2 - 18, 21, 14, 51, 25, 36, 12, 47 What is the median of each of the data sets?
Group 1: 42.5 Group 2: 60 K The data below displays how many minutes of television were watched by two groups of students on a Saturday. Group 1 TV: 25, 40, 45, 30, 60, 45, 30, 60, 90, 30 Group 2 TV: 90, 120, 60, 30, 45, 150, 60, 120, 45, 60 What is the IQR of each data set and how do they compare?	Group 1: 30.5 Group 2: 23 F The following data sets display the number of miles two different groups of teachers drove to school each day. Group 1 - 26, 41, 35, 23, 48, 35, 12, 8 Group 2 - 18, 21, 14, 51, 25, 36, 7, 47 What is the IQR of each data set and how do they compare?

Key: A, C, R, K, N, P, B, G, M, E, D, F, L, T, S, W, back to A

Comparison of Measures of Center and Variability – Scavenger Hunt - Page 3 of 4

Group 1: 30 Group 2: 75 There is a difference of 45 minutes in the IQR of the data sets. There is greater variability in Group 2. N The data below displays how many minutes of television were watched by two groups of students on a Saturday. Group 1 TV: 25, 40, 45, 30, 60, 45, 30, 60, 90, 30 Group 2 TV: 90, 120, 60, 30, 45, 150, 60, 120, 45, 60 What is the mean of each data set?	Group 1: 20.5 Group 2: 25.5 There is a difference of 5 miles in the IQR of the data sets. There is greater variability in Group 2. L The following data sets display the number of miles two different groups of teachers drove to school each day. Group 1 - 26, 41, 35, 23, 48, 35, 12, 8 Group 2 - 18, 21, 14, 51, 25, 36, 12, 47 What is the mean of each data set?
Group 1: 45.5 Group 2: 78 P The data below displays how many minutes of television were watched by two groups of students on a Saturday. Group 1 TV: 25, 40, 45, 30, 60, 45, 30, 60, 90, 30 Group 2 TV: 90, 120, 60, 30, 45, 150, 60, 120, 45, 60 How do the means of both sets compare?	Group 1: 28.5 Group 2: 28 T The following data sets display the number of miles two different groups of teachers drove to school each day. Group 1 - 26, 41, 35, 23, 48, 35, 12, 8 Group 2 - 18, 21, 14, 51, 25, 36, 7, 47 How do the means of both sets compare?

Key: A, C, R, K, N, P, B, G, M, E, D, F, L, T, S, W, back to A

Comparison of Measures of Center and Variability – Scavenger Hunt - Page 4 of 4

The mean of Group 2 is 78 and the mean of Group 1 is 45.5, which tells us that the mean of Group 2 is significantly higher than the mean of Group 1. B The data below displays how many minutes of television were watched by two groups of students on a Saturday. Group 1 TV: 25, 40, 45, 30, 60, 45, 30, 60, 90, 30 Group 2 TV: 90, 120, 60, 30, 45, 150, 60, 120, 45, 60 What is the mean absolute deviation of both groups?	The means of the two data sets are separated by only 0.5, so there is no significant difference between the two means. S The following data sets display the number of miles two different groups of teachers drove to school each day. Group 1 - 26, 41, 35, 23, 48, 35, 12, 8 Group 2 - 18, 21, 14, 51, 25, 36, 12, 47 What is the mean absolute deviation of both groups? (Round to the nearest tenth.)
Group 1: 14.7 Group 2: 33.6 G The data below displays how many minutes of television were watched by two groups of students on a Saturday. Group 1 TV: 25, 40, 45, 30, 60, 45, 30, 60, 90, 30 Group 2 TV: 90, 120, 60, 30, 45, 150, 60, 120, 45, 60 How do the mean absolute deviations of the two groups compare?	Group 1: 11.25 Group 2: 12.5 W The following data sets display the number of miles two different groups of teachers drove to school each day. Group 1 - 26, 41, 35, 23, 48, 35, 12, 8 Group 2 - 18, 21, 14, 51, 25, 36, 12, 47 How do the mean absolute deviations of the two groups compare?

Key: A, C, R, K, N, P, B, G, M, E, D, F, L, T, S, W, back to A

Introduction to Probability – Scavenger Hunt

$\frac{5}{15} = \frac{1}{3}$ A Anna has to wear a uniform to school. She has 4 pairs of pants, 6 shirts, and 2 pairs of shoes. How many different outfits can she make?	$\frac{3}{6} = \frac{1}{2}$ G A pencil container has 3 red pencils, 5 yellow pencils, and 1 blue pencil. What is the probability of randomly selecting a yellow pencil?	$\frac{2}{8} = \frac{1}{4}$ E A spinner is divided into 8 equal sections which are numbered 1 – 8. What is the probability of spinning a number less than 4?	$\frac{2}{7}$ B At the ice cream store there is a choice of 8 flavors, 2 toppings, and 2 types of candy sprinkles. How many different ice cream sundae choices are possible?
48 D There is a bag with 10 marbles. Six of the marbles are red, and four of the marbles are blue. What is the probability of selecting a blue marble at random?	$\frac{5}{9}$ H A bag contains the following letter tiles: (R, S, T, B, C, A). What is the probability of randomly choosing a consonant from the bag?	$\frac{3}{8}$ C A pencil container has 6 red pencils, 5 yellow pencils, and 3 blue pencils. What is the probability of randomly selecting a red pencil?	32 L At the school cafeteria there are 5 main dish choices, 2 sides, and 2 types of dessert. How many lunch choices are possible?
$\frac{4}{10} = \frac{2}{5}$ F A bag contains number tiles from 1 - 10. What is the probability of choosing a number greater than 7?	$\frac{5}{6}$ K The United Middle School sweatshirt is available in 5 sizes. The sweatshirt comes in 2 different colors. How many different shirts are available?	$\frac{6}{14} = \frac{3}{7}$ I John is spinning a spinner with 6 equal sections numbered 1 – 6. What is the likelihood of spinning a 7?	20 J There is a bag with 12 marbles. Two of the marbles are red, 6 of the marbles are green, and 4 of the marbles are blue. What is the probability of selecting a red marble at random?
$\frac{3}{10}$ P If you are tossing a fair number cube, what is the probability you will toss an even number?	10 O Taylor is spinning a spinner with 8 equal sections numbered 1 – 8. What is the probability she will spin a number greater than 6?	impossible N A bag contains the following letter tiles: (W, T, R, U, M, G, and E). What is the probability of randomly choosing a vowel from the bag?	$\frac{2}{12} = \frac{1}{6}$ M A bag contains number tiles from 1 – 15. What is the probability of choosing a number less than 6?

Key: A, D, F, P, G, H, K, O, E, C, I, N, B, L, J, M, back to A

Relative Frequency – Chain Reaction - Page 1 of 2

$\frac{20}{40}$ = 50% R A spinner has four equal sections: blue, green, red, and yellow. When Jennifer spins the spinner 50 times, she has a spin of yellow 11 times. What is the relative frequency of spinning a yellow?	$\frac{15}{50}$ = 30% L Torie has a spinner with six equal sections numbered 1 – 6. She spun a total of 40 times. She landed on the number 3 eight times. What is the relative frequency of landing on a 3?
$\frac{11}{50}$ = 22% M Jan flipped a coin 25 times and got heads 10 times. What is the relative frequency of tossing a head on the coin?	$\frac{8}{40}$ = 20% P A fair number cube is rolled 50 times. The cube lands on a number greater than 4 thirty-five times. What is the relative frequency of rolling a number greater than 4?
$\frac{10}{25}$ = 40% H A bag of marbles has 10 yellows, 6 greens, and 4 reds. Dale randomly chooses a marble 20 times, replacing the marble each time. Of his 20 picks, 7 are green. What is the relative frequency of choosing a green?	$\frac{35}{50}$ = 70% N Barry rolled a number cube 21 times. He landed on a number greater than two 15 times. What is the relative frequency of rolling a number greater than two? (Round to the nearest hundredth)
$\frac{7}{20}$ = 35% C Karen has randomly selected a marble out of a bag 25 times. In the bag there are 13 red and 12 black marbles. She has chosen a black marble 16 times. What is the relative frequency of choosing a black marble?	$\frac{15}{21}$ = 71.43% A Clarence has flipped a coin 12 times. The coin landed on heads only twice. What is the experimental probability of landing on heads? (Round to the nearest hundredth)

Key: R, M, H, C, E, D, Q, J, L, P, N, A, K, B, S, F, back to R

Relative Frequency – Chain Reaction - Page 2 of 2

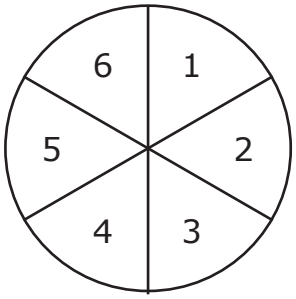
$\frac{16}{25}$ = 64% E In a bag of jelly beans, 10 are purple, 12 are green, 8 are yellow, 5 are orange, and 5 are red. If Sonya were to pick a jelly bean out of the bag 40 times, what do you expect the probability of picking a purple jelly bean to be?	$\frac{2}{12}$ = 16.67% K Walter has rolled a number cube 50 times. He rolled the number 4 twenty-two times. What is the experimental probability of rolling a 4?
$\frac{10}{40}$ = 25% D Erin spun a spinner that is divided into four equal parts: red, green, yellow, and blue. She spun 24 times and landed on blue 10 times. What is the relative frequency of landing on blue? (Round to the nearest hundredth)	$\frac{22}{50}$ = 44% B A spinner has five equal sections numbered 1 – 5. A student spins the spinner 20 times and lands on an even number 12 times. What is the relative frequency of landing on an even number?
$\frac{10}{24}$ = 41.67% Q Maurice rolled a fair number cube 30 times. He rolled a number less than three on 22 of those rolls. What is the relative frequency of rolling a number less than three? (Round to the nearest hundredth)	$\frac{12}{20}$ = 60% S A bag contains colored cubes. There are 4 red cubes, 6 green cubes, 2 black cubes, 7 blue cubes, and 1 white cube. Barb chooses a cube 40 times and replaces the cube each time. Out of the 40 times she pulls a cube, 6 of them are green. What is the relative frequency of green?
$\frac{22}{30}$ = 73.33% J Out of a bag of 25 red and 25 yellow colored chips, Chris picked a chip 50 times. Of those fifty picks, he drew a yellow chip 15 times. What is the relative frequency of picking a yellow chip?	$\frac{6}{40}$ = 15% F Out of a bag of 20 red and 20 yellow colored chips, Noah picked a chip and then replaced it 40 times. How many times would you expect him to draw a red chip?

Key: R, M, H, C, E, D, Q, J, L, P, N, A, K, B, S, F, back to R

Uniform and Non-Uniform Probability Models – Chain Reaction - Page 1 of 4

A. A spinner with four equal sections numbered
1, 1, 2, 3

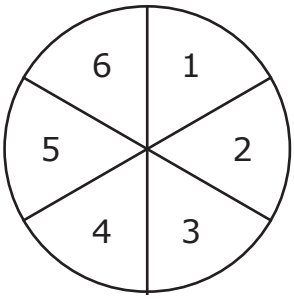
C



What are the events for this spinner?

2

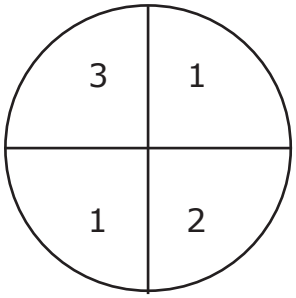
M



If you spin the spinner 24 times, how many times would you expect to land on 6?

1, 2, 3, 4, 5, 6

K



What kind of probability model is represented?
uniform or non-uniform

4

T

A bag contains tiles with the following letters:

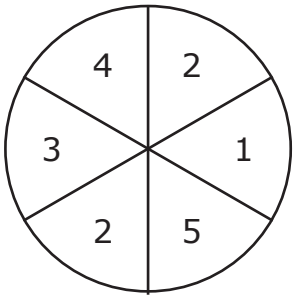
SPINNER

What letter do you expect to draw the most during 50 trials?

Key: C, K, R, E, B, F, L, Q, M, T, H, D, A, G, P, S, back to C

non-uniform

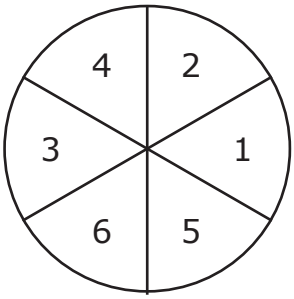
R



What are the possible outcomes for spinning a 2?

The letter N

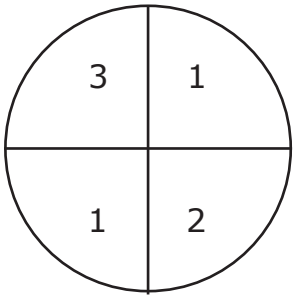
H



What kind of probability model is represented?
uniform or non-uniform

$\frac{2}{6} = \frac{1}{3}$

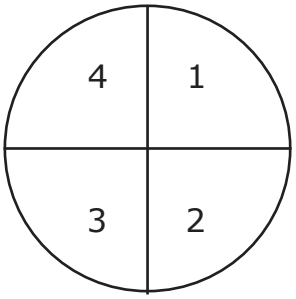
E



If you spin the spinner 10 times, how many times would you expect to land on a 1?

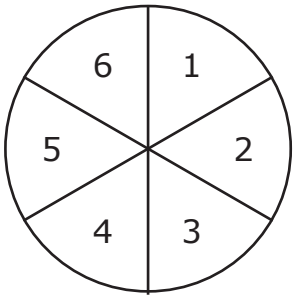
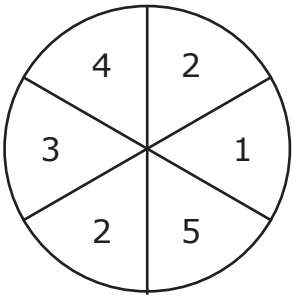
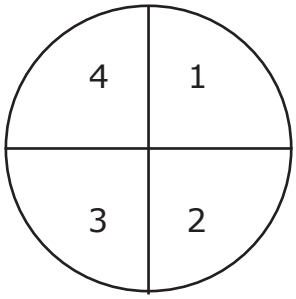
uniform

D



Explain why this is a uniform probability model.

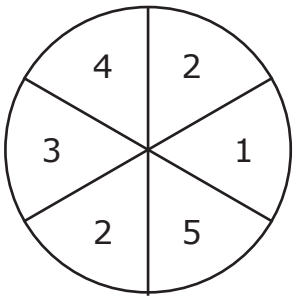
Key: C, K, R, E, B, F, L, Q, M, T, H, D, A, G, P, S, back to C

5 B  What are the possible outcomes for spinning a 5?	Each number has an equal chance of being spun. A  If you were trying to spin an even number, which sample size would more likely have experimental results that would come close to the theoretical probability of $\frac{1}{2}$? 1, 20, 30, 50
$\frac{1}{6}$ F Which of the following examples is a uniform probability model? A. Choosing a marble at random from a bag with 3 red marbles and 2 blue marbles B. Choosing a marble at random from a bag with 5 red marbles and 5 blue marbles	50 G  If you spin the spinner 20 times, what would you predict would be the possible experimental probability for not spinning a 3?

Key: C, K, R, E, B, F, L, Q, M, T, H, D, A, G, P, S, back to C

B. Choosing a marble at random from a bag with 5 red marbles and 5 blue marbles

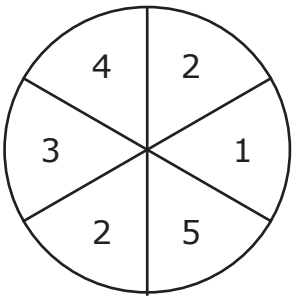
L



If you spin the spinner 24 times, what would you predict would be the possible experimental probability for spinning a 2?

$\frac{15}{20} = \frac{3}{4}$

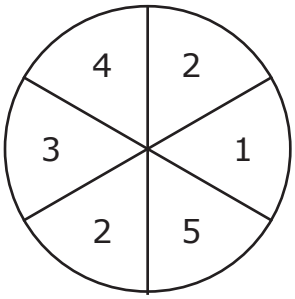
P



What is the probability of spinning a number greater than 1?

$\frac{8}{24} = \frac{1}{3}$

Q



What number do you expect the spinner to land on most frequently?

$\frac{5}{6}$

S

Which of the following examples is a non-uniform probability model?

A. A spinner with four equal sections numbered 1, 1, 2, 3

B. A spinner with four equal sections numbered 1, 2, 3, 4

Key: C, K, R, E, B, F, L, Q, M, T, H, D, A, G, P, S, back to C

Compound Probability - Chain Reaction

$\frac{9}{25}$ G A fair number cube is rolled. What is the probability of rolling a 6 and then rolling a 5?	$\frac{4}{27}$ M James has 6 plain t-shirts and 8 t-shirts with pictures on them. What is the probability that he will randomly select a plain shirt and then a shirt with a picture, without replacing the first shirt?	$\frac{1}{8}$ A There are 16 boys and 14 girls in math class. What is the probability of randomly selecting 2 boys' names from the class list without replacement?	$\frac{5}{36}$ C A fair number cube is rolled. What is the probability of rolling an even number and then rolling an odd number?
$\frac{1}{36}$ B A spinner is divided into 10 equal sections numbered 1 - 10. What is the probability of spinning a number greater than 7 and then spinning a 5?	$\frac{24}{91}$ D A fair number cube is rolled two times. What is the probability of rolling a number less than 3 and then rolling a 6?	$\frac{8}{29}$ F A spinner is divided into five equal sections that are red, blue, green, yellow, and orange. What is the probability of spinning a blue and then spinning a green?	$\frac{1}{4}$ P A spinner is divided into 10 equal sections numbered 1 - 10. What is the probability of spinning a number greater than 3 and then spinning a number greater than 6?
$\frac{3}{100}$ E A spinner is divided into 8 equal sections numbered 1 - 8. What is the probability of spinning a number less than 7 and then spinning an even number?	$\frac{1}{18}$ H A bag contains 4 red marbles, 3 blue marbles, and 2 green marbles. What is the probability of choosing a green marble from the bag and then a red marble, without replacing the first marble?	$\frac{1}{25}$ O A fair number cube is rolled. What is the probability of rolling a number less than 5 and then rolling a number greater than 4?	$\frac{7}{25}$ L A bag contains 5 red marbles, 6 blue marbles, and 4 green marbles. What is the probability of choosing a red marble and then choosing green marble from the bag without replacing the first marble?
$\frac{3}{8}$ T A bag contains 4 red marbles, 3 blue marbles, and 2 green marbles. What is the probability of choosing a blue marble from the bag, replacing it, and then drawing a red?	$\frac{1}{9}$ K In a math card game, there are 20 cards numbered 1-20. What is the probability of randomly choosing a card greater than 15, replacing the card, and choosing an odd number?	$\frac{2}{9}$ S In a word game there are 60 alphabet tiles. 50 out of the 60 tiles are consonants. What is the probability of drawing a consonant, replacing it, and drawing a vowel?	$\frac{2}{21}$ N A bag contains 25 colored tiles. Fifteen of the tiles are red, and ten are blue. What is the probability of drawing a red, replacing it, and then drawing another red?

Key: G, B, E, T, M, D, H, K, A, F, O, S, C, P, L, N, back to G