



GET READY

FOR THE
**SMARTER
BALANCED
ASSESSMENT
IN
MATH**

GRADE 7

CONCEPTS AND PROCEDURES

NAME _____

TEACHER _____

Compiled and organized by the teachers at SMC Curriculum

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★ **PRIORITY CLUSTER**

Grade 7 Claim 1 Target A

Analyze proportional relationships and use them to solve real-world and mathematical problems.

Name: _____

1. Olivia uses $\frac{1}{3}$ cup of orange juice for every $\frac{2}{3}$ cup of pineapple juice to make a fruit drink. Find the number of cups of orange juice Olivia uses for 2 cups of pineapple juice.

2. This table shows a proportional relationship between the number of cups of sugar and flour used for a recipe.

Cups of Sugar	Cups of Flour
3	9
6	18
9	27

Find the number of cups of sugar used for 4 cups of flour.

3. For a drink recipe, the amount of carrot juice is proportional to the amount of guava juice. This equation represents the proportional relationship between the number of quarts of carrot juice (c) and guava juice (g) in a recipe.

$$3c = 4g$$

How many quarts of carrot juice would be used with 1 quart of guava juice?

4. This table shows a proportional relationship between the number of cups of flour and water used for a recipe.

Cups of Flour	Cups of Water
4	$1\frac{1}{2}$
8	3

How many cups of water would be used with 1 cup of flour?

5. Choose **all** tables that represent a proportional relationship between x and y .

A.

x	0	1	2	3
y	0	3	5	6

B.

x	0	1	3	5
y	0	1	9	25

C.

x	0	1	2	3
y	0	5	10	30

D.

x	0	2	4	7
y	0	8	16	28

6. This table shows a proportional relationship between x and y .

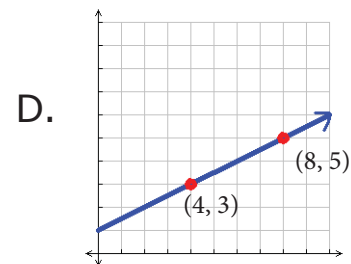
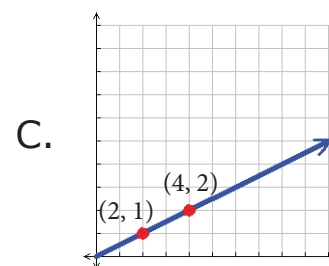
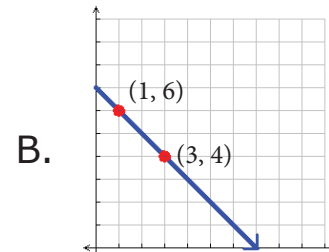
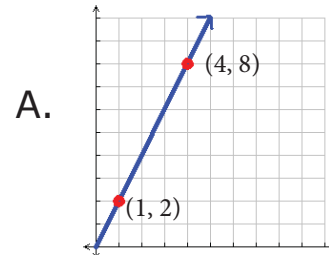
x	y
3	24
4	32
7	56

Find the constant of proportionality (r). Using the value for r , write an equation in the form of $y = rx$.

$r =$ _____

Equation: _____

7. Choose **all** the graphs that show a proportional relationship.



8. Choose **all** tables that represent a proportional relationship between x and y .

A.

x	0	1	3	6
y	0	3	9	18

B.

x	0	$\frac{1}{6}$	$\frac{3}{6}$	$\frac{6}{6}$
y	0	$\frac{1}{9}$	$\frac{1}{3}$	$\frac{2}{3}$

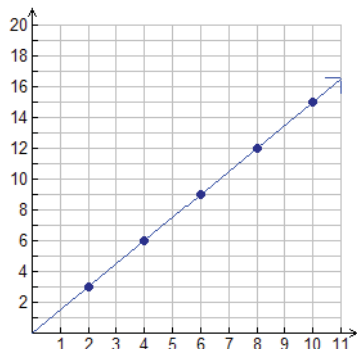
C.

x	0	1	2	3
y	0	5	12	21

D.

x	0	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$
y	0	1	2	4

9. This graph shows a proportional relationship between x and y .

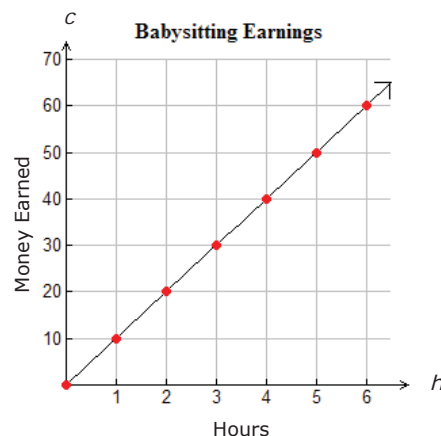


Find the constant of proportionality (r). Using the value for r , write an equation in the form of $y = rx$.

$r =$ _____

Equation: _____

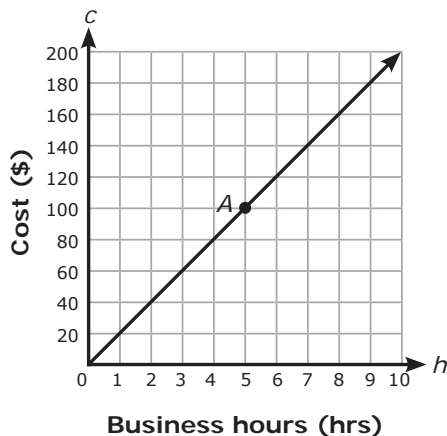
10. This graph shows a proportional relationship between the number of hours (h) a person babysits and the total earnings (c).



Write an equation in the form of $c = rh$ that represents the relationship between the number of hours (h) and the total earnings (c) where r is the constant of proportionality.

11. A cell phone is originally priced at \$120. The store owner gives a discount and the cell phone is now priced at \$90. Find the percentage discount for the cost of the cell phone.

- 12.** This graph shows a proportional relationship between the number of hours (h) a business operates and the total cost (c) of electricity.



Mark True or False for each statement about the graph.

Statement	True	False
Point A represents the total cost of electricity when operating the business for 5 hours.		
The total cost of electricity is \$3 when operating the business for 60 hours.		
The total cost of electricity is \$20 when operating the business for 1 hour.		

- 13.** Nicki bought a T-shirt for \$12 plus an 8% sales tax. Tyson bought a sweatshirt for \$20 plus an 8% sales tax. What is the difference in the amount Nicki and Tyson paid including tax?

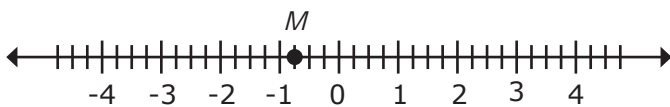
- 14.** Carol bought 36 ounces of lemonade. She drank 10 ounces. What percentage of her lemonade does she have left? Round your answer to the nearest hundredth.

Grade 7 Claim 1 Target B

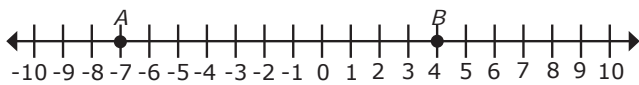
Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Name: _____

1. What numbers are located exactly $\frac{7}{4}$ units from point M on the number line? Plot the numbers on the number line.

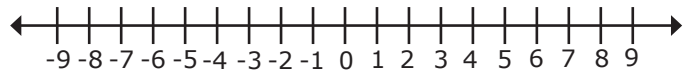


2. Choose **all** expressions that show the distance between A and B.



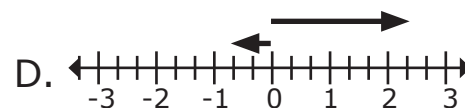
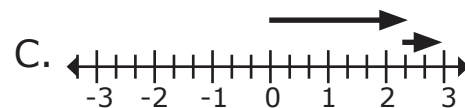
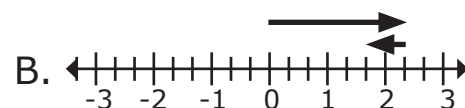
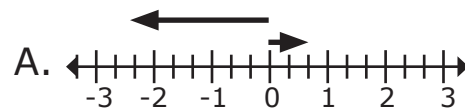
- A. $4 - (-7)$
 B. $4 + |-7|$
 C. $|-7 + 4|$
 D. $4 + (-7)$
3. Find the value of $\frac{2}{3}(-1.5)$.

4. Choose the expression that has a sum or difference between -7 and 7 .

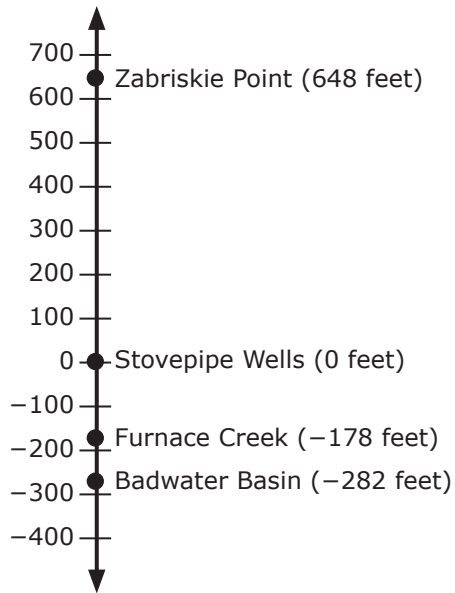


- A. $-4 - 4$
 B. $11 + |-5|$
 C. $-6 + (-2)$
 D. $8 + (-11)$
 E. $6 - (-9)$

5. Which number line model represents the sum of $2\frac{1}{3} + (-\frac{2}{3})$?



6. The number line shows four elevations in Death Valley National Park. What is the difference, in feet, between the elevation at Zabriskie Point and Badwater Basin?



7. Find the value of $\frac{3}{5} + \frac{7}{10} - (-1.5)$.

8. Is the given expression equal to $-5(7 + 3b)$? Mark Yes or No for each expression.

Expression	Yes	No
$-15b - 35$		
$15b + 35$		
$-35 + 15b$		

9. Choose **all** values equal to $-\frac{5}{7}$.

- A. $\frac{-5}{7}$
 B. $\frac{-5}{-7}$
 C. $-\frac{-5}{7}$
 D. $\frac{5}{-7}$
 E. $-\frac{-5}{-7}$

10. What is the decimal equivalent of $\frac{3}{8}$?

- 11.** Find the value of $\frac{5}{8}[-7 + 12 - 3\frac{1}{4}]$.
- 12.** Tino bought a piece of granite that is $5\frac{1}{2}$ feet long. The cost of the granite is \$3.50 per foot, including tax. What is the total cost, in dollars, of Tino's granite purchase?
- 13.** Select all the expressions that equal $-11 - (-2)$.
- A. $-11 + 2$
 - B. $11 + (-2)$
 - C. $11 + 2$
 - D. $-11 + (-2)$
- 14.** What is the value of $5.2 - (-4) + (0.6)$?
- 15.** What is the value of $(-5)(32)(\frac{1}{5})$?
- 16.** What is the value of $(100)(0.001)(10)(-0.1)$?

Grade 7 Claim 1 Target C
Use properties of operations to generate equivalent expressions.

Name: _____

- 1.** Choose all expressions equivalent to $-84x + 48$.

A. $12(-7x - 4)$
B. $6(12x + 8)$
C. $-6(12x - 8)$
D. $-12(7x - 4)$

- 2.** Choose the expression equivalent to $(3.5x + 5.1) - (-2x - 9)$.

A. $1.5x - 14.1$
B. $5.5x - 3.9$
C. $5.5x + 14.1$
D. $5.5x + 3.9$

- 3.** Find the value of n so that the expression $(-y + 4.2) + (6.8y - 9)$ is equivalent to $5.8y + n$.

- 4.** Which expression is equivalent to $-12x + 9$?

A. $-3(4x + 3)$
B. $(-12)x + (-12)3 + (-12)9x$
C. $3(x) - (-3)3 - (-9)x$
D. $-3(4x - 3)$

- 5.** Find the value of r so that $5(n + 6)$ is equivalent to $(n + r)5$.

- 6.** Find the value of b when the expression $12.3x + b$ is equivalent to $4.1(3x - 2.4)$.

7. What is the value of n that makes the expression $(-2y + 4) + (6y - 8)$ equivalent to $(ny - 4)$?
8. Which expression is equivalent to $-0.6(4.2x - 10 + 3.8x)$?
- A. $-4.8x + 6$
B. $-2.52x + 6$
C. $-4.8x - 6$
D. $-2.52x - 6$
9. Write an expression using the fewest terms possible that is equivalent to the following:
 $0.25x + 0.5(x + 8.4) + (x - 4.6)$.
10. Select **all** expressions that are equivalent to $2x + 5(-4x + 10) - (x + 4)$.
- A. $27x + 54$
B. $-19x + 54$
C. $2x - 30x + 50 - x - 4$
D. $2x + 30x + 50 - x + 4$
11. What is the value of b so that $\frac{1}{2}(x + \frac{4}{5})$ is equivalent to $\frac{1}{2}x + b$?
12. Which expression is equivalent to $18x - 3$?
- A. $3(6x + 1)$
B. $3(6x - 3)$
C. $-3(6x - 3)$
D. $3(6x - 1)$

Grade 7 Claim 1 Target D

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Name: _____

1. Choose **all** expressions equivalent to

$$3.4 \cdot \left(2\frac{3}{8} + 0.375\right) - 8.$$

- A. $3.4 \cdot (2.75) - 8$
- B. $8 - 3.4 \cdot \left(2.375 + \frac{3}{8}\right)$
- C. $-8 + 3.4 \cdot \left(2.375 + \frac{3}{8}\right)$
- D. $3.4 \cdot (8 - 2.375)$

2. Choose from the numeric expressions and write each into one of the empty cells to make true equations.

$(2)\left(\frac{1}{2}\right) + \frac{2}{5}$	=	
$\frac{2.75 + 3.25}{0.5}$	=	
$\frac{(3.25)4.5}{1.5}$	=	
$4.375 + \frac{16}{24}$	=	

$4.25 + \frac{3}{1.5} + \frac{7}{2}$	$4.375 + \frac{2}{3}$
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$1 + \frac{2}{5}$	$10 + \frac{50}{25}$
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3. Find the number that makes the equation true.

$$2.30 + \frac{4}{25} = \frac{\square}{100} + \frac{16}{100}$$

4. Find the value of $6.7 \cdot (5 + 9)$.

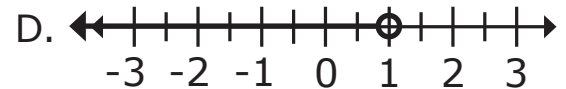
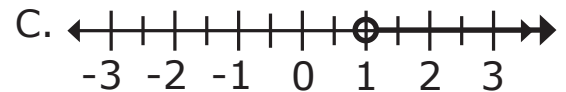
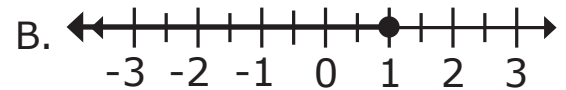
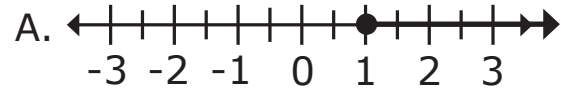
5. A coach buys a uniform and a soccer ball for each of the 20 players on the team. Each soccer ball costs \$11. The coach spends a total of \$720 for uniforms and soccer balls. Find the cost of 1 uniform. Round to the nearest cent.

6. A teacher buys a pencil and water bottle for each of the 25 students in her class. Each pencil costs \$0.40. The teacher spends a total of \$85 for pencils and water bottles. Write an equation that models the situation with w , the cost of one water bottle.

7. What is the mean of -10 , -14 , 6 and -4 ?

8. What is the value of x ?
 $6(x - 4) = 10$

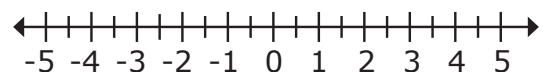
9. Which number line shows the solution to the inequality $-5x + 2 < -3$?



10. Layla has \$42. She earns \$8 for 1 hour (h) of yard work. She wants to buy an ice skating pass for \$95. Write an inequality that shows the number of hours (h) Layla could do yard work to be able to buy the ice skating pass.

11. Graph the solution of the inequality.

$$3x + 7 > 13$$

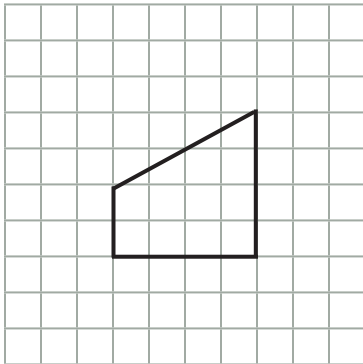


Grade 7 Claim 1 Target E

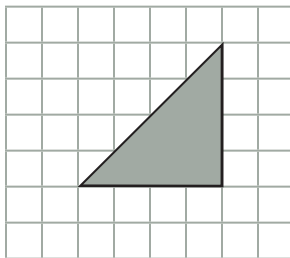
Draw, construct, and describe geometrical figures and describe the relationships between them.

Name: _____

1. A scale factor of 2 is applied to this figure. Draw the resulting figure.

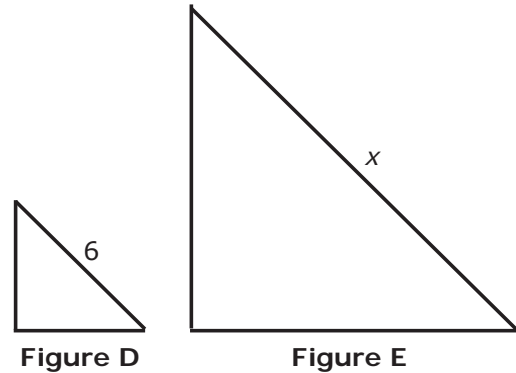


2. The diagram of a triangular park was drawn using a scale factor of 1 centimeter to 30 meters.

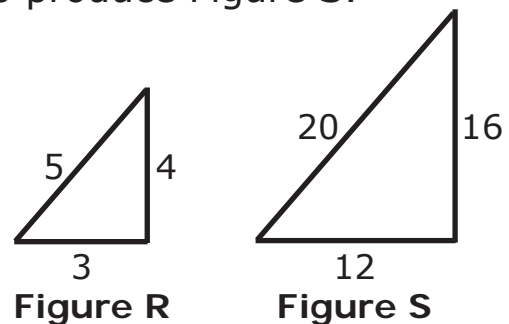


In the diagram shown, assume each square on the grid is 1 centimeter in length. What is the area, in square meters, of the actual park on which this scale drawing is based?

3. Figure D is a scale image of Figure E, as shown. The scale that maps Figure D onto Figure E is $1:4\frac{1}{2}$. Find the value of x .

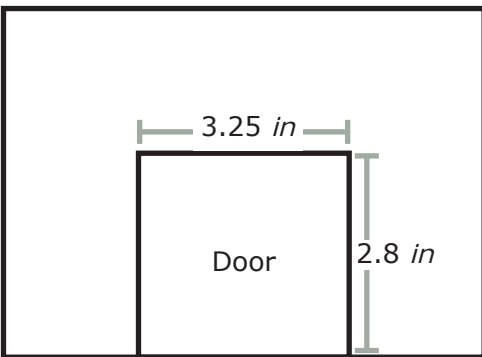


4. Figure R is a scale image of Figure S, as shown. Find the scale factor applied to Figure R to produce Figure S.

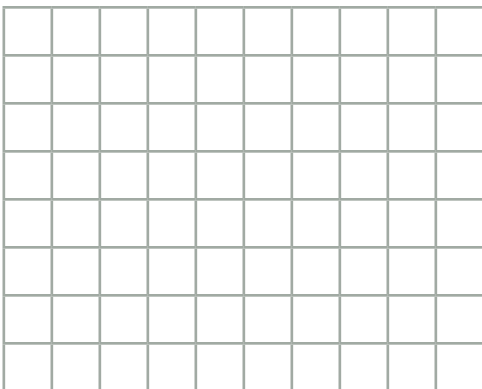


5. The front side of a shop is shown in this scale drawing. The height of the door in the drawing is 2.8 inches. The scale that maps the drawing to the actual shop is 1 inch to 3.5 feet. Using the scale given, what is the actual height, in feet, of the shop door?

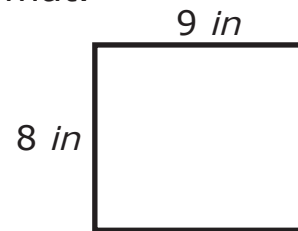
Scale Drawing of the Shop



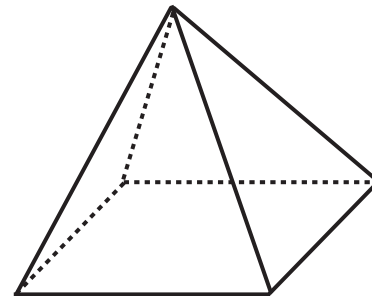
6. Draw a triangle with a 90° angle, a side with a length of 4 units, and a side with a length of 5 units. Each square on the grid is 1 unit in length.



7. The scale drawing of a rectangular floor mat below has dimensions 9 inches by 8 inches. The length of the longer side of the actual mat is 63 feet. Enter the area, in square feet, of the actual mat.



8. This figure is a square pyramid. Choose all figures that can be formed by a vertical slice perpendicular to the base of the square pyramid.



- A. Line segment
- B. Triangle
- C. Isosceles Trapezoid
- D. Square

Grade 7 Claim 1 Target F

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

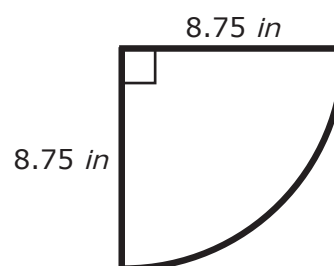
Name: _____

1. The radius of a circle is 6.4 centimeters. What is the area of the circle, in square centimeters? Round your answer to the nearest hundredth.

2. The radius of a circle is 11.3 centimeters. What is the circumference of the circle, in centimeters? Round your answer to the nearest hundredth.

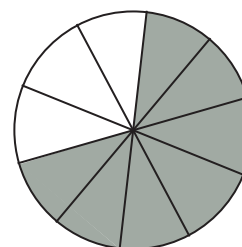
3. A circular table top has a radius of 4 feet. Find the area, in square feet, of the table top. Round your answer to the nearest hundredth.

4. A corner shelf has a radius of 8.75 inches and represents $\frac{1}{4}$ of a circle, as shown.

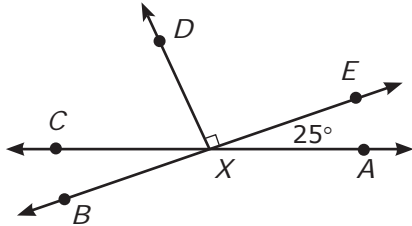


Find the area of the shelf, in square inches. Round your answer to the nearest hundredth.

5. The circumference of the circle is approximately 31.4 inches. The shaded region is $\frac{7}{10}$ of the whole circle. What is the area of the shaded region, in square inches? Round your answer to the nearest hundredth.

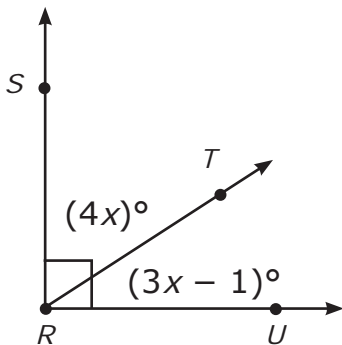


6. Lines AC and BE intersect at point X . Based on the diagram, determine whether each statement is true. Mark True or False for each statement.



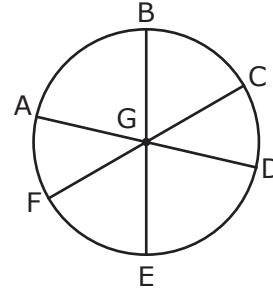
Statement	True	False
An angle supplementary to $\angle BXA$ measures 25° .		
An angle supplementary to $\angle BXC$ measures 65° .		
An angle vertical to $\angle EXA$ measures 25° .		

7. Consider this figure. What is the measure of $\angle TRU$, in degrees?



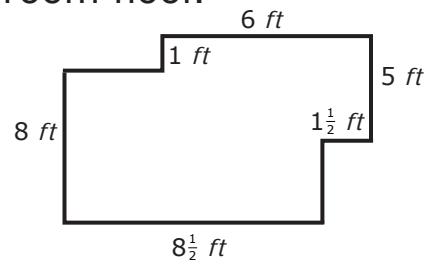
8. \overline{AD} , \overline{BE} and \overline{CF} are all diameters of the circle shown.

- ◆ $m\angle CGD = 45^\circ$
- ◆ $m\angle AGE = 95^\circ$

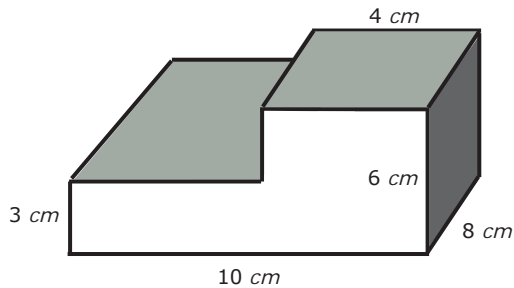


What is the measure of $\angle DGE$?

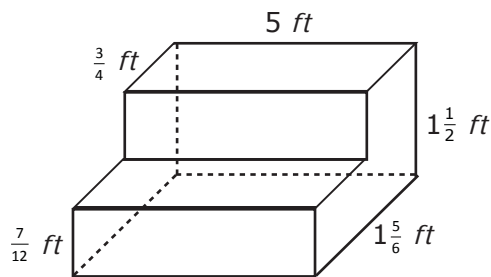
9. This is the floor plan of Natalie's bedroom. Find the amount of carpet, in square feet, needed to completely cover Natalie's bedroom floor.



- 10.** The figure shown is created by joining two right rectangular prisms. Find the volume of the figure, in cubic centimeters.

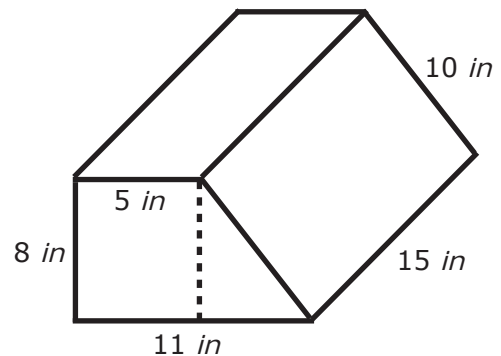


- 11.** The figure shows a set of concrete stairs to be built. Find the amount of concrete, in cubic feet, needed to build the stairs. Round your answer to the nearest hundredth.



- 12.** Hank wants to paint a rectangular prism that is 4 feet by 2 feet by 15 feet. How many square feet will he paint if he paints every side once?

- 13.** The figure shows the dimensions for a birthday gift. Find the minimum amount of wrapping paper, in square inches, needed to cover the gift. Round your answer to the nearest whole inch.



Grade 7 Claim 1 Target G
Use random sampling to draw inferences about a population.

Name: _____

1. A random sample of 60 students from a high school with 900 students is surveyed. Each student is asked what math class he or she is taking and all students at the school take math. The table shows the responses.

<i>Math Class</i>	<i>Number of Students</i>
Algebra	12
Geometry	18
Pre-Calculus	20
Statistics	10

Based on the survey results, which statement about all of the students at the high school is most appropriate to make?

- A. Twice as many students at the high school are taking Pre-Calculus than are taking Algebra.
- B. About 10% of students at the high school are taking Statistics.
- C. In a group of 100 students, it is expected that 30 of the students are taking Geometry.
- D. It is estimated that about 150 of the students at the high school are taking Algebra.

2. Levi wants to estimate the number of students from his seventh grade class whose favorite subject is science. He plans to ask 30 students and wants the sample to be representative of his seventh grade class. From which of the following populations should he randomly select his sample?

- A. Students in a science class.
- B. Students on a school bus.
- C. Students in seventh grade.
- D. Students in the cafeteria.

3. Delaney asked 25 students about their favorite flavor of ice cream. Twelve responded that their favorite flavor was chocolate. If there are 275 students at her school, how many would you predict would choose chocolate as their favorite flavor based on this survey?

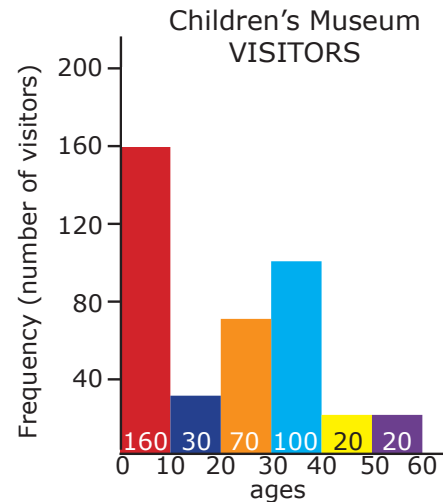
4. A bakery manager wants to estimate how many of each type of dessert will be purchased in a month. The manager keeps track of the orders for one week. The table shows the results.

<i>Dessert Type</i>	<i>Number Ordered</i>
Cake	123
Pie	105
Cookie	218

Based on the data, which estimate could represent the number of times each type of dessert will be ordered in a month?

- A. 246 cake, 420 pie, 436 cookie
 B. 369 cake, 315 pie, 654 cookie
 C. 500 cake, 475 pie, 625 cookie
 D. 420 cake, 872 pie, 492 cookie
5. A professional basketball player practiced shooting free throws before a game. He made 12 of 15 shots. Predict how many free throws he will make in the game if he has 5 opportunities.

6. The histogram below shows the number of visitors in each age range that visited Children's Museum during a time period of one hour.



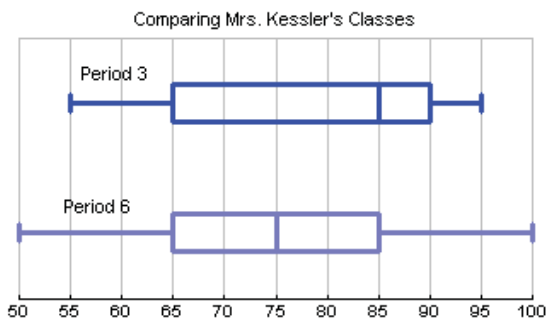
Find the probability that the next person to visit Children's Museum is between 0 and 10 years old.

Grade 7 Claim 1 Target H

Draw informal comparative inferences about two populations.

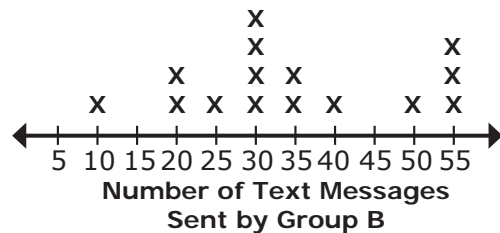
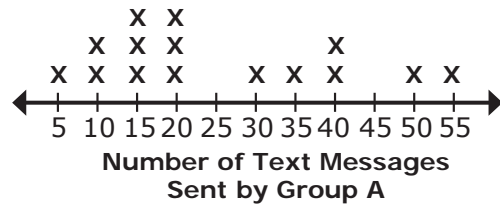
Name: _____

1. The box plot shows a summary of test scores for Period 3 and Period 6 on the same exam. Both classes have the same number of students. Determine whether each statement is true based on these box plots. Mark True or False for each statement.



Statement	True	False
In each class, 25% of students scored below 65 on the test.		
The median test score of Period 6 is 5 points less than the median test score of Period 3.		
In each class, more than 25% of students have test scores greater than 90.		

2. These dot plots show the number of daily text messages sent by two different groups of students.



Part A: How much **greater** is the median number of text messages sent by Group B than the median number of text messages sent by Group A?

Part B: How many students in Group B sent **fewer** text messages than the mean number of text messages sent by Group A?

Grade 7 Claim 1 Target I

Investigate chance processes and develop, use, and evaluate probability models.

Name: _____

1. A deck of 18 cards labeled 1 through 18 is shuffled. One card is selected at random. Determine whether each statement correctly describes the likelihood of an event based on the given deck of cards. Mark True or False for each statement.

Statement	True	False
It is impossible that a card with a number greater than 19 is selected.		
It is likely that a card with a number greater than 2 is selected.		
It is certain that a card with an odd or even number is selected.		
It is unlikely that a card with a number less than 5 is selected.		

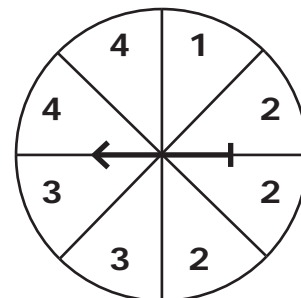
2. A number cube, numbered 1 to 6, is rolled one time. What is the probability it lands on a multiple of 3?

3. This table shows outcomes of a spinner with 3 equal sections colored red, white, and blue.

Section	Outcomes
Red	20
White	24
Blue	16

Based on the outcomes, find the number of times the arrow is expected to land on the red section if it is spun 30 times.

4. This spinner is divided into 8 equal-sized sections. What is the probability of the arrow landing on a section labeled 3 on the first spin?



5. This table shows the results of randomly selecting colored marbles from a bag 20 times. Based on these results, find the expected probability of selecting a red marble from the bag in one attempt.

Color	Number of Times Selected
Yellow	5
Blue	2
Orange	2
Purple	1
Green	6
Red	4

6. A fair coin is flipped 5 times. What is the probability of the coin landing on its head all 5 times?

7. A fair coin is flipped 6 times. It lands facing heads down 4 out of 6 times. The probability of a coin landing heads down on one flip is $\frac{1}{2}$. Choose the statement that best explains why the observed frequency is different than the predicted probability.
- A. They most likely differ because of the kind of coin used.
- B. They most likely differ because the sample size is too small.
- C. They most likely differ because the coin had heads on both sides.
- D. They most likely differ because $\frac{4}{6}$ and $\frac{1}{2}$ have different denominators.
8. Two number cubes, each with faces labeled 1 through 6, are rolled at the same time. Find the probability that both number cubes have the same number facing up in one roll.