

6th Grade Spring
Break Packet



Due: Monday, April 29, 2019

Name: _____

Name:

Date:

Life of a Gladiator

Wealthy Romans initiated the spectacle of gladiatorial combat over 250 years before the birth of Christ as a part of the ceremonies held to honor their deceased relatives. Later, these games became separate events sponsored by Rome's leading citizens in order to improve their prestige. With the decline of the republic and the rise of the empire, the emperor adopted and led gladiator games. The primary purpose of these life-or-death duels was to entertain the crowd of spectators that jammed into the arena.

Although some freemen chose to live the life of a gladiator, the majority were slaves, captured during the many wars Rome fought to expand its territory. The future gladiator received training and became skillful in a specific type of combat and the use of specific weapons such as the sword, net or the three-pronged spear known as the trident.

The games began early, lasted all day and were usually divided into three presentations. The morning was dedicated to the display and slaughter of animals, many of them exotic beasts gathered from the far reaches of the empire. Lions, elephants, giraffes and other rare animals all played a role in a display of butchery designed to advertise the diversity of the far-flung empire and Rome's mastery of Mother Nature.

The morning session was followed by a lunch break in which patrons could leave the arena to satisfy their hunger. Those who stayed were entertained with the execution of common criminals. An attempt was made to match the method of the doomed person's death with the crime committed. Those who had murdered were thrown unprotected to wild beasts. Those who had committed arson were burned alive. Others were crucified. Criminals also provided the fuel for entertainment in the re-enactment of historic naval battles in which the arena was flooded and the convicted forced to play the role of the doomed crews of enemy ships.

The afternoon was devoted to the main event - the combat of the gladiators. Typically, gladiators with different strengths were pitted against one another. Much like a modern boxing match, the duels were governed by strict rules and overseen by a referee to assure these rules were followed. Music provided by the band played different music depending on the action in the arena. The crowd would ultimately decide whether the loser would live or die.

"...it was plain butchery."

The Roman philosopher Seneca took a view of gladiatorial contests. Interestingly, his criticism is not based on horror at the butchery he witnesses, but because the display is boring and therefore unworthy of the attention of a well-reasoned man. In a letter to a friend, he describes what he saw in the arena during the reign of Emperor Caligula:

Directions

Read this story. Then answer questions 8 through 14.

Drawing Horses

by Cerelle Woods

I'd give anything to draw horses the way Euphemia Tucker does. She draws them in the margins of spelling tests and on the back of her math homework. They're always running wild and free, their manes swirling over the paper like clouds across the sky.

5 Euphemia's horses look so real you can almost feel their breath on your face.

10 Luke Anderson, who sits next to me, says he can't decide whether my horses look more like Great Danes or kitchen tables. He also calls me Messy. I prefer Marisa, which is my real name, to Missy, which is what everyone—except Luke—calls me. If I could draw like Euphemia, I'd sign all my pictures Marisa. Nobody messes with Euphemia's name, not even Luke Anderson.



15 Today I sharpened my pencil and took a clean sheet of paper out of my desk. Then I closed my eyes and pictured one of Euphemia's perfect horses rearing up and pawing the air with its sharp hooves. I could see it so clearly I was sure I'd be able to draw it this time.

20 I started with what I do best: a big, billowing mane. Next I roughed in most of the body and drew a long tail streaming out behind. It really wasn't turning out half bad until I got to the front-legs-pawing-the-air part, which looked more like two macaroni noodles with tiny marshmallows for hooves.

I tried again, but the hooves still didn't seem right, and rather than doing them over and over, I erased them and went on to the head. That was when I really ran into trouble.

25 First I drew some great donkey ears, followed by sheep ears, pig ears, kangaroo ears . . . everything except horse ears. I erased again and again until I had rubbed a hole in the paper. That was when Luke Anderson poked his nose over my shoulder.

I scratched a big X through my earless, macaroni-legged horse, wadded it up into a little ball, and stuffed it under the lid of my desk.

30 I was still upset when I got off the school bus this afternoon. I walked past the neighbors' horses standing in the field next to our house. They've been in that field for as long as I can remember. Their stringy manes never float into the sky. Their ragged old tails hang straight down to the ground, and I've never seen them run.

GO ON

I brooded about it all through dinner. After I'd helped clear the dishes, I sat down with a stack of typing paper and a freshly sharpened pencil. Without Luke Anderson there to pester me, I hoped I'd have better luck. I practiced a few horses' heads, trying to get the ears right. Nothing worked.

35

I tossed all the sketches into the trash and walked outside. The sun had just sunk below the horizon, feathering the whole sky with pink and orange wisps. Everything looked special in that light, even the scraggly horses next door.

I dragged a lawn chair over to the fence and sat down to take a better look at them. They'd never be free spirits like Euphemia's horses, but they did seem patient and strong. I noticed the curves of their muscles, the shadows on their faces, the shine along their backs. Their colors reminded me of dessert—rich chocolate, deep cinnamon, creamy caramel.

40

45

I was just sitting there, feeling kind of dazzled by the unexpected beauty of it all, when I remembered the big box of pastels my grandmother had sent.

An idea began to take shape in my mind, and just then the cinnamon horse turned its head toward me and nodded three times. It was like a sign.

50

I hurried into the house, grabbed the pastels and some paper, and raced for the door.

I choose a deep brown, pulling it across my paper in the shape of the chocolate horse. It comes out right the first time, even the legs and ears! Drawing horses is easier when they're right in front of you, and I'll say this for the ones next door—they hold their poses.

55

The sky is turning out just as I'd hoped, too; all the pinks and reds blending together like a strawberry parfait, and I love the way the caramel horse's mane is blowing, just barely, in the wind.

It doesn't look exactly like one of Euphemia's horses, of course. But I already know that when this drawing is finished, I'll be signing it Marisa.



8 In line 3, what does the simile “like clouds across the sky” help the reader understand about the horses in Euphemia’s sketches?

- A** They are drawn sloppily.
- B** They look like they are in motion.
- C** They are getting tangled up with each other.
- D** They look like they are trotting through fog.

9 How do lines 14 through 16 contribute to the development of the plot?

- A** They establish Marisa’s problem.
- B** They emphasize Marisa’s hopefulness.
- C** They contrast Marisa’s artistic abilities with Euphemia’s.
- D** They illustrate Marisa’s determination to not let Luke bother her.

10 Which phrase best conveys the tone in lines 1 through 30?

- A** “They’re always running wild and free. . .” (lines 2 and 3)
- B** “He also calls me Messy.” (lines 8 and 9)
- C** “Next I roughed in most of the body. . .” (lines 17 and 18)
- D** “I scratched a big X through my earless, macaroni-legged horse, . . .” (line 26)

GO ON

11

Read this sentence from line 32.

I brooded about it all through dinner.

What effect does the word “brooded” have in the story?

- A It shows Marisa’s anxiety about her abilities.
- B It reveals Marisa’s motives for drawing.
- C It emphasizes how Marisa is growing as a character.
- D It indicates Marisa has a major decision to make.

12

How do lines 36 through 38 help convey the theme of the story?

- A They show that some situations take time to change.
- B They prove that practice can help natural talents to develop.
- C They suggest that inspiration may come in unexpected ways.
- D They demonstrate that new ideas will eventually be accepted.

13

Which sentence **best** explains why Marisa’s final horse drawing was different than her first tries?

- A “Everything looked special in that light, even the scraggly horses next door.” (lines 37 and 38)
- B “I noticed the curves of their muscles, the shadows on their faces, the shine along their backs.” (lines 42 through 44)
- C “An idea began to take shape in my mind, and just then the cinnamon horse turned its head toward me and nodded three times.” (lines 49 and 50)
- D “I choose a deep brown, pulling it across my paper in the shape of the chocolate horse.” (line 52)

GO ON

14

How does Marisa change while watching her neighbors' horses?

- A She realizes that Euphemia's horses do not look realistic, so she decides to try to draw better pictures than her friend.
- B She decides to try a different way of drawing and is proud of her work.
- C She realizes she can never be an artist like Euphemia but wants to draw like her anyway.
- D She finally learns that drawing horses is easier with proper lighting and art supplies.

GO ON

Directions

Read this article. Then answer questions 29 through 35.

Move Over, Spider-Man— Here's Spider-Goat!

by Joli Allen

Making silk threads isn't just for spiders anymore. A special type of goat is doing it, too. Nubian goats look and act like any other playful, floppy-eared goats. But when they aren't playing, these goats are busy making spider silk.

5 Spider silk is absolutely amazing. It's five times stronger than steel, but it's also very light and flexible. Because of this, scientists plan to use it to make some totally cool things! Imagine clothing that's as light as a cobweb, yet won't tear, or fishing line and tennis racket strings that won't break. Doctors might be able to use spider silk for making tiny stitches in delicate eye surgery, but it could also be strong and flexible enough to replace some worn-out parts of the human body. The silk also could be used to build
10 airplanes, buildings, and bridges, as well as create a tough coating for space stations. Because of all these possibilities, scientists have been searching for ways to make spider silk in huge quantities, and they have finally found the answer: Nubian goats!

15 Scientists have studied spider silk for years. They tried to raise spiders on spider farms to collect silk from them, but the spiders didn't enjoy living so close to one another. Spiders like their own space, and when they don't get it . . . well . . . they make space by eating their neighbors!

20 Goats, the scientists discovered, are much friendlier than spiders and are also easier to work with. Because they're bigger, a few goats can produce more silk than a roomful of spiders. The scientists chose Nubian goats for this job because they make milk at a younger age than many other goats. So, the Nubian goats will make spider silk sooner and for longer periods of time.

25 But how do the goats actually make the spider silk? That's what scientist Jeffrey Turner wanted to figure out when he taught animal science at McGill University in Montreal. He noticed that the body parts of spiders that make silk and the parts of goats that make milk are very much alike. Because of this, he figured that goats might be able to make spider silk. The idea excited him, and he started his own company in 1993 to do more research on how goats could do what spiders have been doing for years.

Eventually, Turner and his fellow scientists found a way to place spider genes in goats so that the genes fit nicely, like a guest in a comfortable hotel. Every living animal, including humans, has a set of genes inside of it that tells its body what to do. These genes are very, very tiny, but they hold lots of information on how to build parts of the body. A spider's genes contain instructions for making spider silk, and a goat's genes contain instructions for making milk. So by putting spider genes into goats, the goats then have the genes that tell their bodies how to make spider silk proteins.

Proteins are the body's basic building blocks. Just as people have proteins in their bodies that make their hair, skin, and muscles, the goats now have special proteins for making spider silk. When the goats produce milk, the spider silk proteins are in it, but it looks just like regular milk. Scientists separate the proteins out of the milk by skimming off the fat and then sprinkling salt on it. The salt makes the spider silk proteins curdle into small clumps. These clumps are scooped out, and water is added until the mixture has the thickness of maple syrup. This is spider silk, and it's ready to be spun!

Next, the silk is taken to a spinning machine that copies the way spiders spin their silk. The secret to extra strong silk is in how the spiders spin it: they stretch the silk over and over again. The stretching makes all the protein building blocks line up, lock together, and form a strong but flexible band. When the giant spinning machine is finished, the silk threads are stronger than steel and as flexible as rubber . . . but they're also thinner than a human hair.

Producing milk with spider proteins in it doesn't hurt the goats. Scientists did years of research to make sure the goats would be safe and healthy. The milk that's left after the spider proteins are removed can still be used—as fertilizer on fields that grow feed for the goats.

In 1998, Dr. Turner bought a farm in Canada for raising his spider-silk goats, and they still live there today. The one thousand goats that make spider silk are raised in a normal environment and are healthy, curious, and energetic—just like any other Nubian goats. Their owner gives them lots of space to roam and play. The goats particularly enjoy rolling down the farm's grassy hills, and they love listening to country music. Other music, such as rock music, has strange rhythms that make the goats jittery, but the steady beat of country music keeps them calm and happy. H'm . . . I wonder if they'd like the "Itsy Bitsy Spider" song.

- 29 In lines 4 through 12, the author explains why scientists are trying to find a way to produce spider silk using goats by showing
- A possible uses for spider silk
 - B the popularity of spider silk
 - C how easy spider silk is to use
 - D how quickly spider silk can be developed
- 30 Which statement best explains an advantage of using goats rather than spiders for the production of silk?
- A Goats produce stronger silk than spiders do.
 - B Scientists can insert genes into goats but not into spiders.
 - C Spider proteins in goat milk can be spun into silk.
 - D Goats are bigger than spiders and are much easier to raise.
- 31 What did Jeffrey Turner discover about using Nubian goats for possible silk production?
- A Nubian goats already make a similar substance.
 - B Nubian goats have high amounts of protein in their milk.
 - C Nubian goats and spiders both prefer living in large groups.
 - D Nubian goats and spiders have body parts that are similar.

32 In the process described in lines 35 through 47, which step allows the threads to become strong enough for surgical procedures?

- A The silk proteins are turned into clumps.
- B The silk is stretched repeatedly.
- C Salt is added to the goat's milk.
- D Water is added to thin the clumps.

33 Why are lines 55 through 59 important to the article?

- A They suggest that the goats are unusual.
- B They explain how the goats are kept busy.
- C They explain that the goats are treated well.
- D They suggest that the goats are like humans.

34 Which statement **best** expresses a central idea of the article?

- A Nubian goats produce better quality silk than spiders.
- B Spider silk is a complex substance that takes effort to make.
- C Nubian goats have been genetically altered to produce spider silk.
- D Spider silk contains proteins that are similar to proteins in other living things.

GO ON

35 Which detail is **most** important to include in a summary of the article?

- A** Scientists have made an attempt to gather silk from spiders living on farms.
- B** Spider silk has qualities that can be used in many products.
- C** A scientist started a company to research goat silk.
- D** Machines spin spider silk into thin threads.

STOP

Grade 6 Mathematics Reference Sheet

CONVERSIONS

1 inch = 2.54 centimeters

1 meter = 39.37 inches

1 mile = 5,280 feet

1 mile = 1,760 yards

1 mile = 1.609 kilometers

1 kilometer = 0.62 mile

1 pound = 16 ounces

1 pound = 0.454 kilogram

1 kilogram = 2.2 pounds

1 ton = 2,000 pounds

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 gallon = 3.785 liters

1 liter = 0.264 gallon

1 liter = 1,000 cubic centimeters

FORMULAS

Triangle

$$A = \frac{1}{2}bh$$

Right Rectangular Prism

$$V = Bh \text{ or } V = lwh$$

- 1 A bakery sells 5 apple muffins for every 2 bran muffins sold. Which table shows this ratio?

A

Apple	Bran
5	2
10	12
20	22

C

Apple	Bran
5	2
18	8
20	10

B

Apple	Bran
10	4
15	6
35	14

D

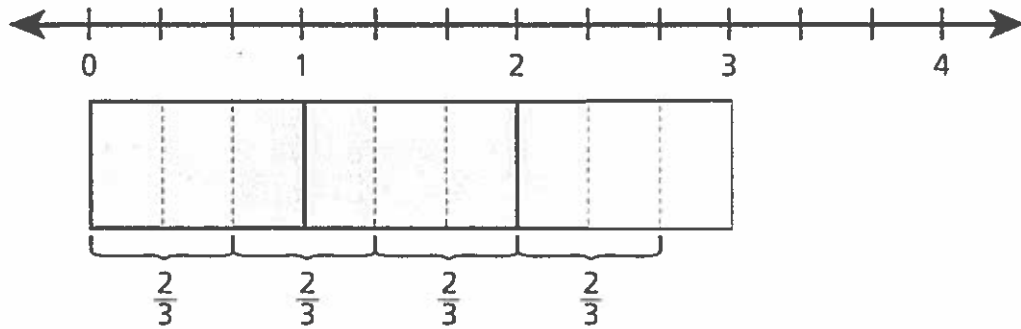
Apple	Bran
20	4
30	6
40	8

- 2 In which set do all of the values make the inequality $2x - 1 < 10$ true?

- A {10, 15, 20}
B {5, 7, 9}
C {4, 6, 8}
D {2, 3, 4}

GO ON

- 3 The model below represents a division problem.



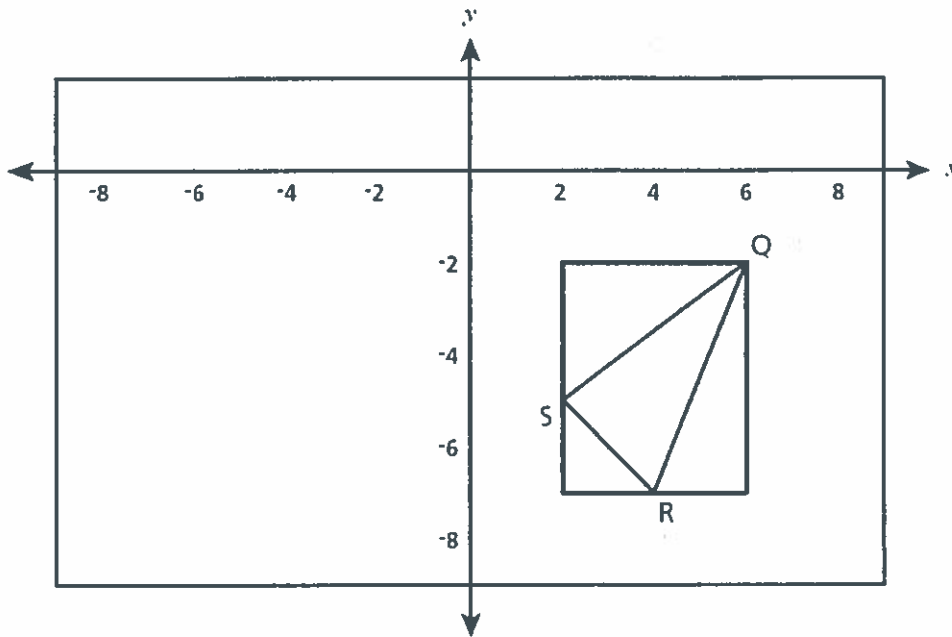
Which equation is represented by the model?

- A $2\frac{1}{3} \div \frac{2}{3} = 3\frac{1}{2}$
- B $2\frac{1}{3} \div \frac{2}{3} = 3\frac{1}{3}$
- C $\frac{7}{1} \div \frac{1}{3} = 2\frac{1}{3}$
- D $\frac{2}{3} \div 3\frac{1}{2} = 2\frac{1}{3}$
- 4 What is the value of the expression below?

$$2[3(4^2 + 1)] - 2^3$$

- A 156
- B 110
- C 94
- D 48

- 9 Triangle QRS, with vertices $Q(6, -2)$, $R(4, -7)$, and $S(2, -5)$, is drawn inside a rectangle, as shown below.

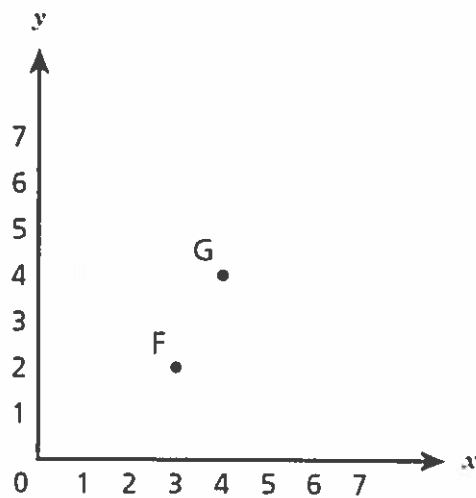


What is the area, in square units, of triangle QRS?

- A 7
B 10
C 13
D 18

GO ON

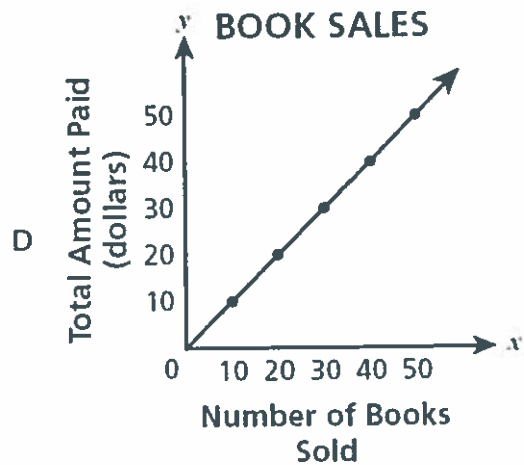
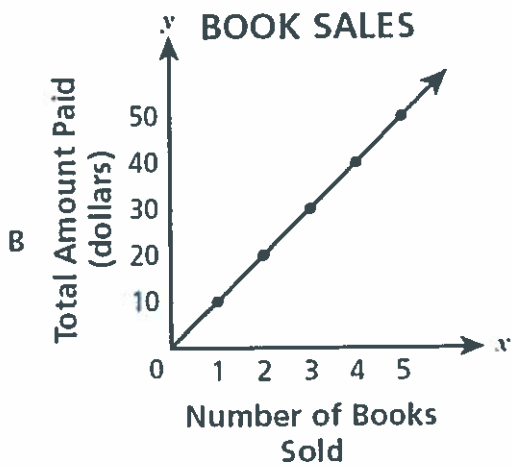
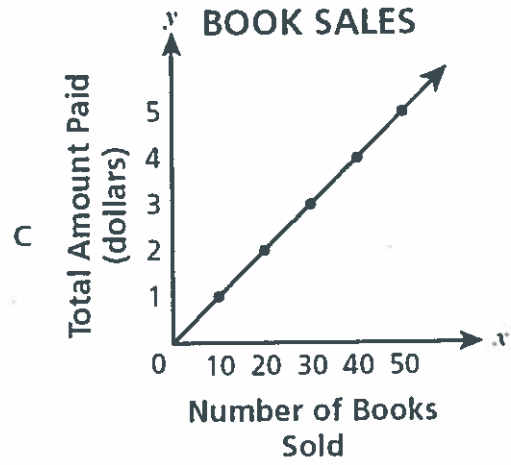
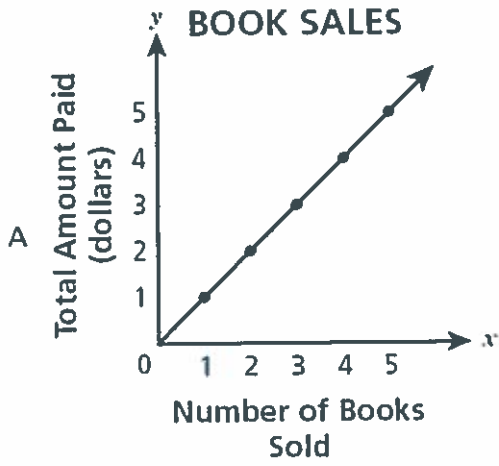
- 10 Points F and G have been plotted on the coordinate plane below.



Point G and point H are the same distance from point F. Which coordinates could be the location of point H?

- A (1, 2)
- B (4, 2)
- C (5, 1)
- D (2, 5)

- 13 A bookstore is selling books for \$10 each. Which graph shows the relationship between the number of books, x , the store sold and the total amount of money, y , paid from the book sales?



- 14 The ratio of students to adults on a field trip is 8 to 1. Which table correctly shows this ratio for each grade?

A

Grade	Number of Students	Number of Adults
6	96	88
7	120	112
8	136	128

C

Grade	Number of Students	Number of Adults
6	96	12
7	120	15
8	136	17

B

Grade	Number of Students	Number of Adults
6	96	104
7	120	128
8	136	144

D

Grade	Number of Students	Number of Adults
6	96	11
7	120	13
8	136	15

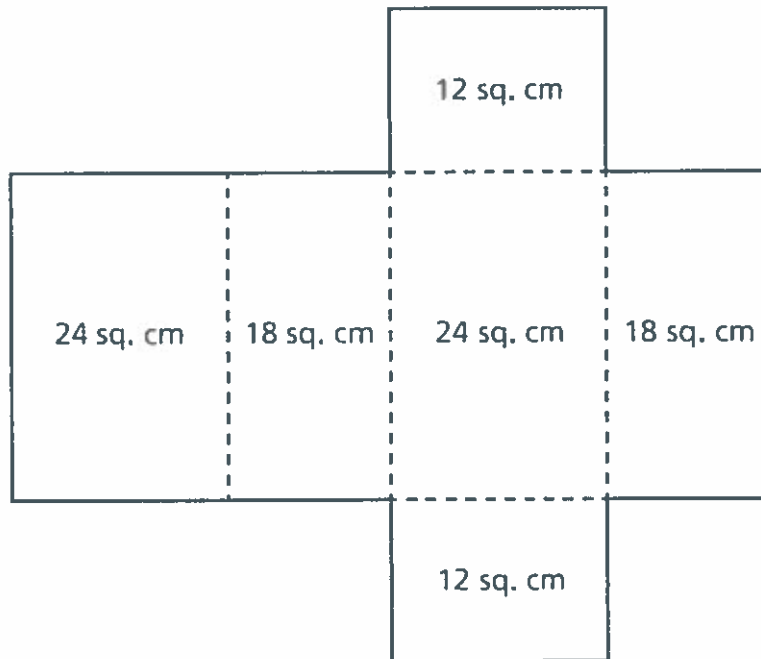
- 15 Which phrase is a description of $2m - 7$?

- A 7 more than 2 times m
- B 2 more than 7 times m
- C 2 times the sum of 7 and m
- D 7 times the sum of 2 and m

GO ON

- 16 George has \$23 to spend on art supplies. He wants to buy markers, paper, and glue. If the total cost of the markers and paper is more than \$14, which inequality represents the dollar amount, p , George can spend on glue?
- A $p < 9$
 B $p > 9$
 C $p < 37$
 D $p > 37$

- 17 The net of a rectangular prism is shown below. The surface area of each face is labeled.



Which values represent the dimensions, in centimeters, of the rectangular prism?

- A 12, 18, 24
 B 3, 4, 8
 C 3, 4, 6
 D 2, 9, 12

GO ON

- 18 A salesperson had \$240,000 in sales last year, which is 60% of the sales she had this year. Which equation could be used to determine x , the salesperson's total amount of sales, in dollars, for this year?

A $\frac{240,000}{x} = \frac{60}{100}$

B $\frac{240,000}{100} = \frac{x}{60}$

C $\frac{60}{240,000} = \frac{x}{100}$

D $\frac{60}{100} = \frac{x}{240,000}$

- 19 A student formed a pattern in which each term is represented by a sum. The first four terms of the pattern are shown below.

n	Sum
1	1
2	1 + 3
3	1 + 3 + 5
4	1 + 3 + 5 + 7

Which expression can be used to determine the value of the sum in any term, n ?

- A n^2
B $4n$
C $n - 3$
D 2^n

GO ON

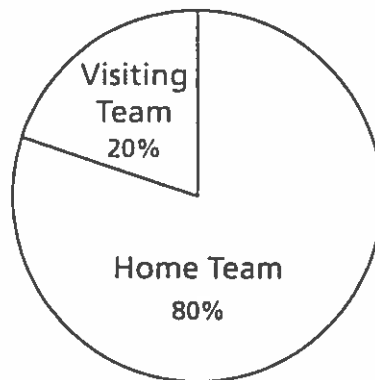
- 20 Jason will use a $\frac{1}{3}$ -gallon pitcher to fill an empty $\frac{3}{4}$ -gallon water jug. How much water will he need in order to completely fill the water jug?
- A between 1 and 2 full pitchers
 - B between 2 and 3 full pitchers
 - C about $\frac{1}{2}$ of a full pitcher
 - D about $\frac{1}{4}$ of a full pitcher

23 Which expression is equivalent to $5(6x + 3y)$?

- A $11x + 3y$
- B $11x + 8y$
- C $30x + 3y$
- D $30x + 15y$

24 The diagram below shows the percentages of people attending a football game who were supporters of either the home team or the visiting team.

SUPPORTERS AT FOOTBALL GAME



If the total number of people attending the game was 64,000, how many people were supporters of the home team?

- A 12,800
- B 38,400
- C 48,000
- D 51,200

25 Which pair of expressions is equivalent for any variable value greater than zero?

A $3(x + 2)$ and $3x + 2$

B $4d + 2e$ and $8d + e$

C $f + f + f + g$ and $3fg$

D $b + b + 3c$ and $2b + 3c$

26 What is the greatest common factor of 42 and 84?

A 7

B 21

C 42

D 84

STOP

- 29 The surface area, S , of a right rectangular prism with length l , width w , and height h can be found using the formula below.

$$S = 2(lw + wh + hl)$$

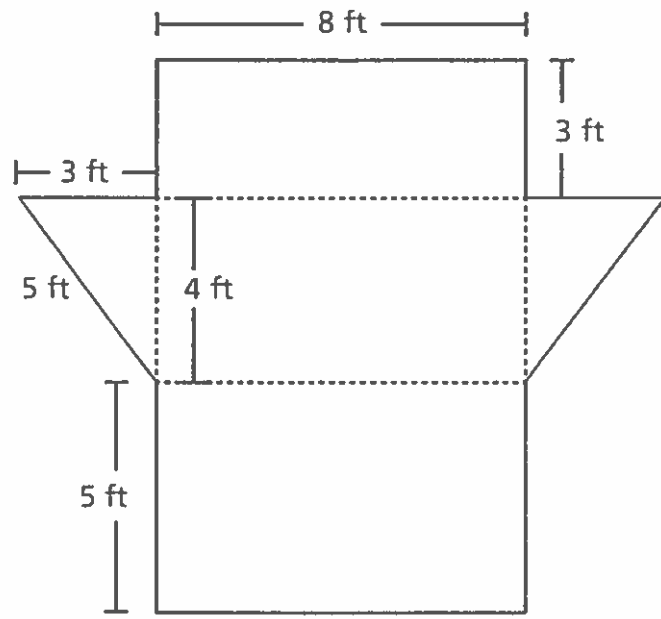
What is the surface area, in square inches, of a prism with a length of 12 inches, a width of 9 inches, and a height of 2 inches?

- A 300
B 258
C 150
D 92
- 30 Which point on the number line below represents the number opposite the number $-5\frac{1}{2}$?



- A point P
B point Q
C point R
D point S

- 42 A net of a triangular prism is shown below.



What is the surface area, in square feet, of the triangular prism?

- A 44
- B 96
- C 108
- D 120

36 A triangle has vertices on a coordinate grid at points $J(-1, 5)$, $K(4, 5)$, and $L(4, -2)$. What is the length, in units, of \overline{KL} ?

- A 3
- B 7
- C 8
- D 11

37 Rosa has a goal of running a total of 100 miles this month. Each day that she ran, she ran 5 miles. Which expression could Rosa use to determine how many miles she has left to run after running for d days?

- A $100 - 5d$
- B $5d + 100$
- C $\frac{100}{5d}$
- D $5d$

GO ON

- 40 Steve ordered plastic cases for storing his baseball cards. Each case has a length of 12 centimeters, a width of 6.5 centimeters, and a height of 1.25 centimeters. What is the volume, in cubic centimeters, of one baseball card case?
- A 39.5
 - B 97.5
 - C 118.5
 - D 202.25
- 41 Kim rode her bicycle 135 miles in 9 weeks, riding the same distance each week. Eric rode his bicycle 102 miles in 6 weeks, riding the same distance each week. Which statement correctly compares the number of miles per week they rode?
- A Eric rode 2 more miles per week than Kim rode.
 - B Kim rode 3 more miles per week than Eric rode.
 - C Kim rode 11 more miles per week than Eric rode.
 - D Eric rode 17 more miles per week than Kim rode.

GO ON

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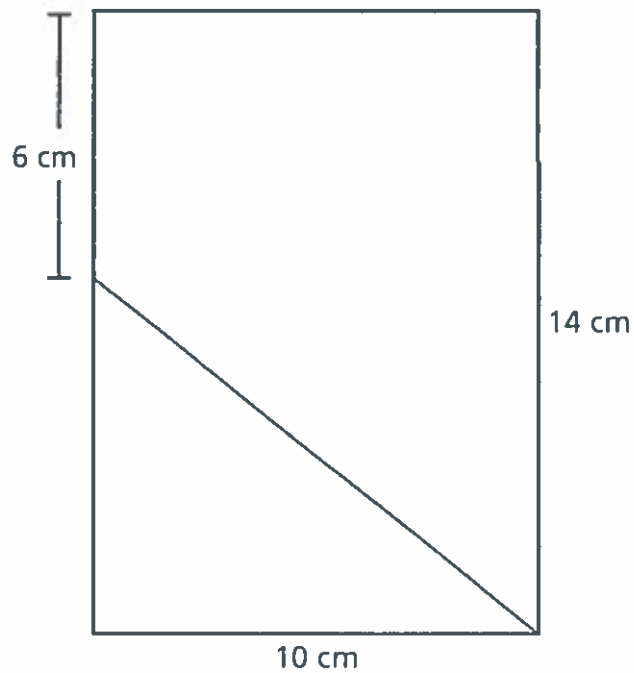
Which quantity could go in the blank to make the equation below true?

$$x + 2x + \underline{\hspace{1cm}} = 5x$$

- A 2
- B 3
- C $2x$
- D $3x$

GO ON

- 50 What is the area, in square centimeters, of the shaded part of the rectangle shown below?



- A 20
- B 60
- C 100
- D 140

- 51 A sandwich shop sells sandwiches for \$5.95 each, including tax. The shop received a total of \$71.40 from the sales of sandwiches one afternoon. Which equation can be used to determine the number of sandwiches, x , sold by the sandwich shop that afternoon?

A $5.95 + x = 71.40$

B $5.95 \div 71.40 = x$

C $5.95x = 71.40$

D $5.95 \div x = 71.40$

STOP

- 58 A hotel has a number of meeting rooms, m , available for events. Each meeting room has 325 chairs. Write an equation to represent c , the total number of chairs, in all of the meeting rooms at the hotel.

Equation _____

If $m = 7$, use your equation to find the total number of chairs in all of the meeting rooms at the hotel.

Show your work.

Answer _____ chairs

GO ON

- 57 The area of Brian's rectangular garden, in square feet, can be found by using the expression $6(2x + 5y)$. Use the distributive property to write an equivalent expression for the area of Brian's garden.

Equivalent expression _____

Use your equivalent expression to find the area of Brian's garden, in square feet, if $x = 3$ and $y = 4$.

Show your work.

Area _____ square feet

GO ON

