DIRECTIONS

Read each question carefully. For a multiple-choice question, determine the best answer to the question from the four answer choices provided. For a griddable question, determine the best answer to the question. Then fill in the answer on your answer document.

1 Frank had $65. He spent $2 per day for 7 days. Then he was given $9 to divide equally between himself and his 2 brothers. The following expression can be used to find the amount of money Frank had after that.

$$65 - 2 \cdot 7 + 9 \div 3$$

Based on this expression, what is the amount of money Frank had remaining?

A $150

B $54

C $20

D $444

---

2 A baby weighed 7.25 lb at birth. At the end of 8 months, the baby weighed $2\frac{1}{2}$ times its birth weight. How many pounds did the baby weigh at the end of 8 months?

F 14.5 lb

G 9.75 lb

H 18.125 lb

J 14.125 lb

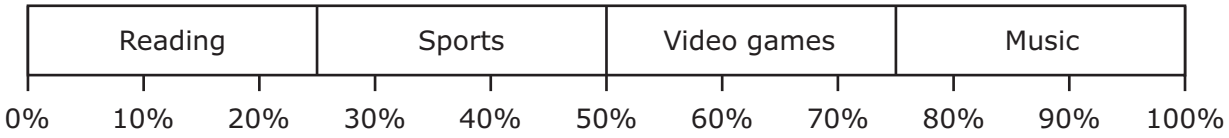
3 Hector surveyed all the sixth graders at his school about their favorite after-school activity. The table shows the results that were used to make a bar graph.

Favorite Activities

Activity	Number of Students
Reading	44
Sports	55
Video games	55
Music	66

Which percentage bar graph best represents the data?

A



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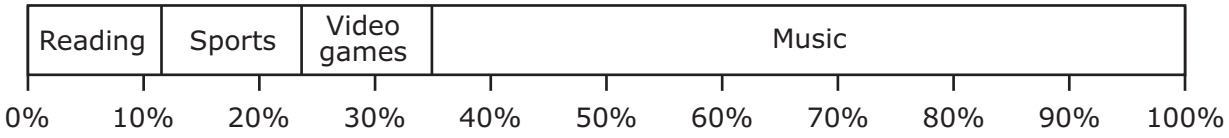

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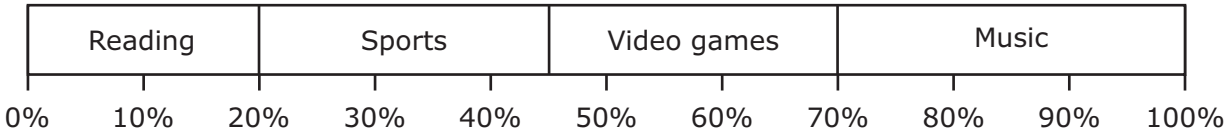
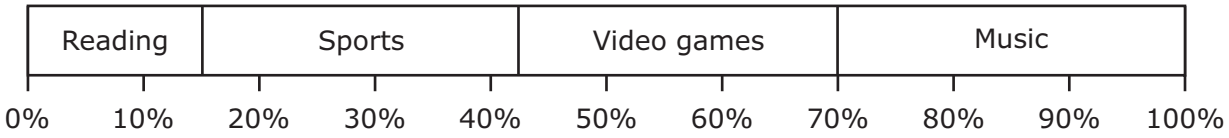
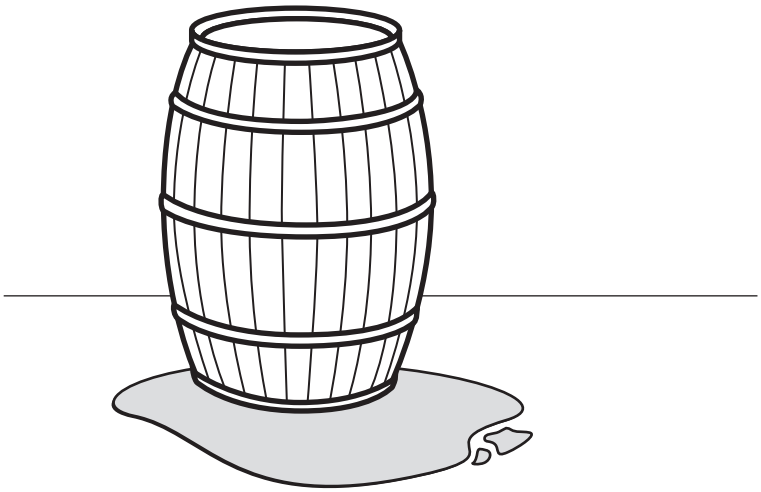


D



4 A barrel contained 60 gallons of water. Water leaked out of the barrel at a rate of 5 gallons every 3 days.



At this rate, how many days did it take for all 60 gallons of water to leak out of the barrel?

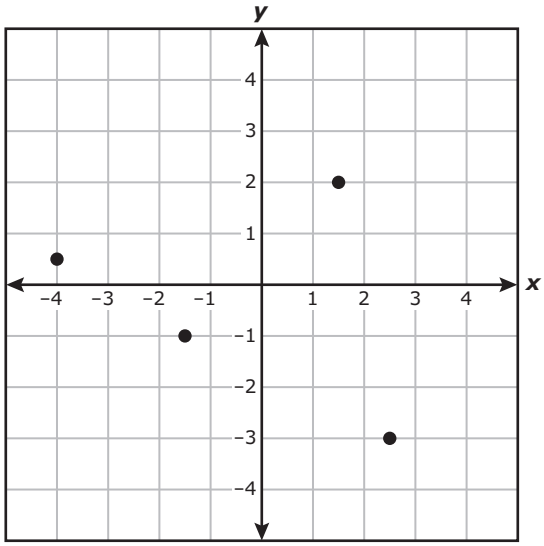
F 20 days

G 12 days

H 100 days

J 36 days

5 Four points are graphed on the coordinate grid.



Which ordered pair does **not** appear to be represented by one of these points?

A $(\frac{5}{2}, -3)$

B $(-1, -1\frac{1}{2})$

C $(\frac{3}{2}, 2)$

D $(-4, \frac{1}{2})$

6 A carpenter wants to cut a board that is $\frac{5}{6}$ ft long into pieces that are $\frac{5}{16}$ ft long. The carpenter will use the expression shown to calculate the number of pieces that can be cut from the board.

$$\frac{5}{6} \div \frac{5}{16}$$

Which expression can also be used to calculate the number of pieces that can be cut from the board?

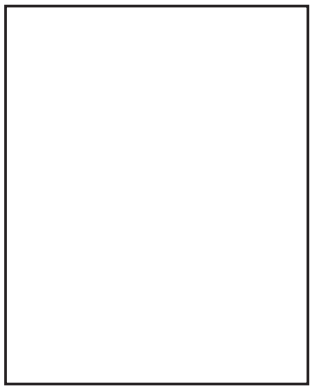
F $\frac{5}{6} \cdot \frac{16}{5}$

G $\frac{5}{6} \cdot \frac{5}{16}$

H $\frac{6}{5} \div \frac{5}{16}$

J $\frac{6}{5} \div \frac{16}{5}$

7 The rectangle below represents the base of a rectangular prism. Use the ruler provided to measure the dimensions of the rectangle to the nearest centimeter.



The height of the rectangular prism is 12 centimeters. What is the volume of the rectangular prism?

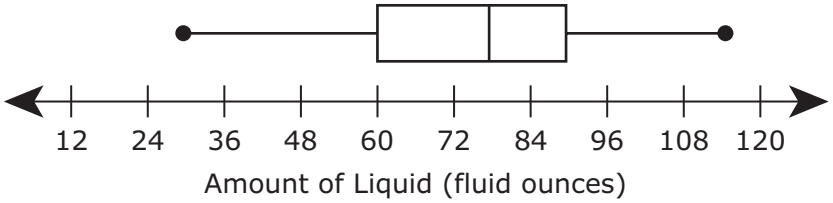
A 32 cm^3

B 20 cm^3

C 360 cm^3

D 240 cm^3

8 Students recorded the amount of liquid in fluid ounces each of them drank in one day. The box plot shows the summary of the results.



Which statement best describes the data represented in the box plot?

F Half the students drank from 78 to 114 fluid ounces.

G The greatest number of students drank from 30 to 78 fluid ounces.

H The data represent 78 student responses.

J The mean number of fluid ounces that the students drank is 78.

---

9 Which two expressions are equivalent?

A $4 + (3 \cdot y)$ and $(4 + 3) \cdot y$

B $(18 \div y) + 10$ and $10 + (y \div 18)$

C $12 - (y \cdot 2)$ and $12 - (2 \cdot y)$

D $(10 - 6) \div y$ and $10 - (6 \div y)$

10 Mr. Smith has a maximum of $50 to spend at a museum. A ticket to the museum costs $7. He can spend p dollars to buy other things at the museum. Which inequality can be used to find the possible values for p?

F $p - 7 > 50$

G $p - 7 < 50$

H $p + 7 \geq 50$

J $p + 7 \leq 50$

---

11 Mrs. Torres is mailing a package that weighs 12.5 pounds. The post office charges by the ounce to mail a package. How much does the package weigh in ounces?

A 187 ounces

B 200 ounces

C 192.5 ounces

D 100 ounces

12 A team of four players competed in a golf contest. The names and scores of the players on the team are shown in the table. The team's score is the sum of all the scores in the table.

Golf Scores

Player	Score
Brett	−2
Elliott	+3
Lin	−4
Tyrone	−1

What is the team's score?

F 10

G −10

H −4

J Not here

---

13 A farmer watered $\frac{3}{8}$ of a field. What percentage is equivalent to the fraction of the field the farmer watered?

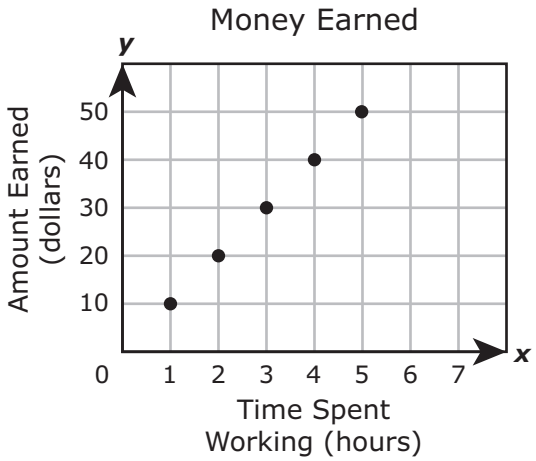
A 24.00%

B 37.50%

C 8.30%

D 3.75%

14 The graph shows the amount of money earned by an employee based on the time he spent working.



Which list shows the dependent quantities in the graph?

F 10, 20, 30, 40, 50

G 1, 2, 3, 4, 5

H 11, 22, 33, 44, 55

J 101, 202, 303, 404, 505

15 The table shows the amount of time four students practiced the trumpet one day.

Trumpet Practice Times

Name	Time (hours)
Cole	$1\frac{2}{3}$
Gus	$1\frac{1}{2}$
Ryan	$1\frac{1}{4}$
Jacob	$1\frac{7}{12}$

Which list shows the names of the students in order from the least amount of practice time to the greatest amount of practice time?

A Ryan, Jacob, Cole, Gus

B Cole, Jacob, Gus, Ryan

C Ryan, Gus, Jacob, Cole

D Gus, Ryan, Cole, Jacob

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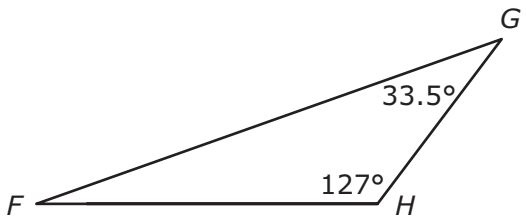
16 In triangle *FGH* shown below, what is the measure of $\angle F$ in degrees?



Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

17 The list shows the number of licenses issued every year to lobster boats in Massachusetts for a five-year period.

551, 554, 529, 534, 530

What is the range of these data?

A 534

B 540

C 21

D 25

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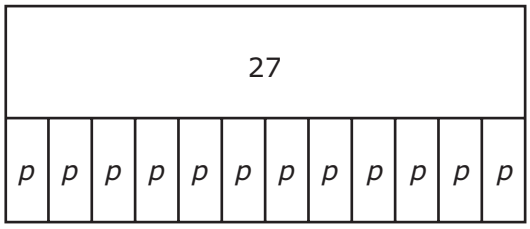
18 Holly bought a magazine subscription for a year. She paid $27. Holly wanted to find the price, p, of the subscription each month. She created the model shown to help find this price.



What was the price of the subscription each month?

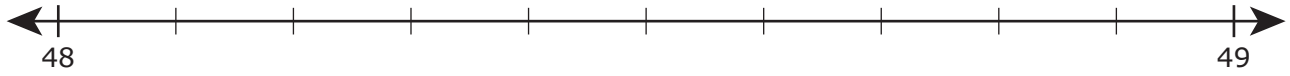
F $39.00

G $2.25

H $324.00

J $22.50

19 Alyssa will correctly label the numbers 48.4, $48\frac{1}{2}$, 48.09, and $48\frac{3}{5}$ on the number line below.



Which number will be located closest to 49?

A 48.4

B $48\frac{1}{2}$

C 48.09

D $48\frac{3}{5}$

---

20 Which statement describes the relationship between x and y in these two equations?

$$y = 2x$$
$$y = x + 2$$

F In $y = 2x$ the value of y is 2 more than the value of x, and in $y = x + 2$ the value of y is twice the value of x.

G In $y = 2x$ and in $y = x + 2$, the value of y is 2 more than the value of x.

H In $y = 2x$ and in $y = x + 2$, the value of y is twice the value of x.

J In $y = 2x$ the value of y is twice the value of x, and in $y = x + 2$ the value of y is 2 more than the value of x.

21 The table shows the monthly fees for the checking accounts at two banks.

Checking Account Fees at Two Banks

Bank	Monthly Fee
Y	1% of checking account balance
Z	$5

Which statement is best supported by the information in the table?

A The fee at Bank Y will always be less than the fee at Bank Z.

B The fee at Bank Y will always be more than the fee at Bank Z.

C The fee at Bank Y will be more than the fee at Bank Z only when a customer's balance is more than $500.

D The fee at Bank Y will be more than the fee at Bank Z only when the checking account balance is less than $500.

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22 As part of a survey, 300 girls were asked to name their favorite sport. The results showed that 12 of the girls named bowling as their favorite sport. What percentage of the girls in the survey named bowling as their favorite sport?

F 4%

G 12%

H 25%

J 0.04%

23 A county with an area of 425 square miles has a population of 9,350 residents. Which rate best represents the relationship between the population of the county and the area of the county?

A 22 square miles per resident

B 9,350 residents per square mile

C 22 residents per square mile

D 425 square miles per resident

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24 The table shows the relationship between d, the amount of money Alice has at the beginning of each day, and w, the amount of money she has after riding the bus to work.

Alice's Money

Money at the Beginning of the Day, d	Money After Riding the Bus to Work, w
\$15.75	\$14.50
\$9.50	\$8.25
\$5.25	\$4.00
\$30.00	\$28.75

Which equation represents the relationship in the table?

F $w = d + 1.25$

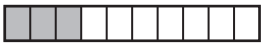
G $w = 14.50d + 1.25$

H $w = 15.75d - 1.25$

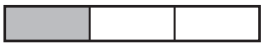
J $w = d - 1.25$

25 This shaded model represents 100%.

Which model represents $33\frac{1}{3}$%?

A 

B 

C 

D 

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26 The table below shows the relationship between the perimeter and area of four squares.

Squares

Area, A (square units)	Perimeter, P (units)
1	4
4	8
9	12
16	16

Which equation can be used to find A, the area of a square that has a perimeter of P units?

F $A = (P \div 4) \times (P \div 4)$

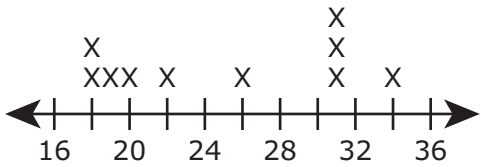
G $A = (P - 4)$

H $A = (P + 4) \times (P + 4)$

J $A = P$

27 The line plot shows the number of pounds of fish eaten by each dolphin at a zoo.

Fish Eaten by Dolphins
(pounds)



Which stem and leaf plot best represents the data in the line plot?

A

Fish Eaten by Dolphins
(pounds)

Stem	Leaf
1	8 8
2	0 0 2 6
3	1 1 1 3

KEY
2|0 = 20 pounds

C

Fish Eaten by Dolphins
(pounds)

Stem	Leaf
1	8 8 9
2	0 2 6
3	1 1 1 4

KEY
2|0 = 20 pounds

B

Fish Eaten by Dolphins
(pounds)

Stem	Leaf
1	7 7 8
2	0 1 5
3	0 0 0 3

KEY
2|0 = 20 pounds

D

Fish Eaten by Dolphins
(pounds)

Stem	Leaf
1	8 9
2	0 2 6
3	1 4

KEY
2|0 = 20 pounds

28 A meteorologist at a television station reported that a town received 0.95 in. of rain. Which fraction is equivalent to this amount of rain in inches?

F $\frac{19}{50}$ in.

G $\frac{19}{20}$ in.

H $\frac{95}{10}$ in.

J $\frac{9}{5}$ in.

---

29 The table shows the average annual salary for four jobs.

Average Annual Salaries

Job	Average Annual Salary (dollars)
Copywriter	55,869
Librarian	54,407
Elevator technician	71,900
Aircraft mechanic	52,975

Based on this information, how much more will an elevator technician make than a librarian over 10 years?

A $174,930

B $126,307

C $17,493

D $1,263,070

30 A teacher wrote this expression on the board.

$$(-6)(2) + (-8 \div 4)$$

What is the value of this expression?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

---

31 Which equation has a solution of $\frac{2}{3}$ for n?

A $n - 1 = \frac{1}{3}$

B $16n = 24$

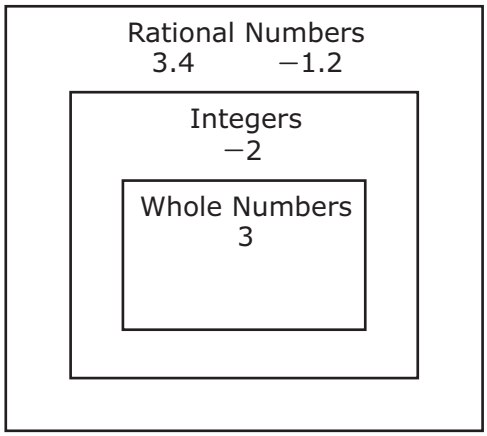
C $15n = 10$

D $1\frac{1}{3} + n = 3$

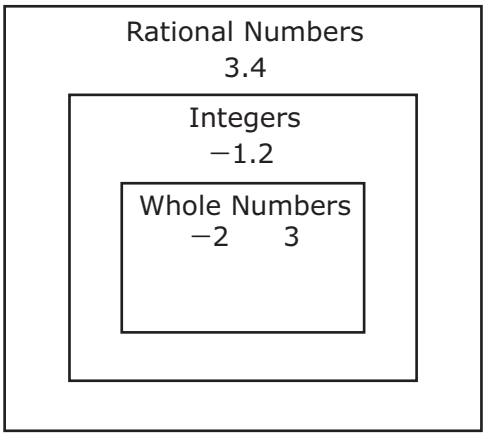
32 Which graphic organizer correctly groups the following numbers?

3.4 −2 3 −1.2

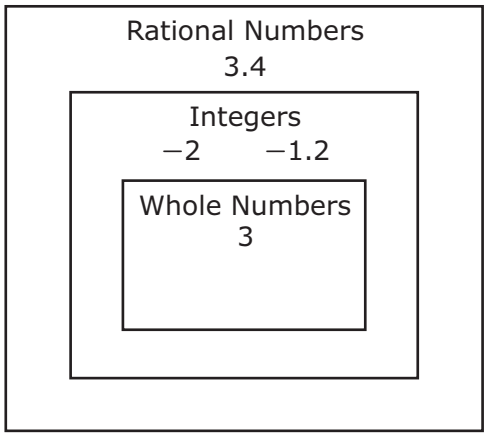
F



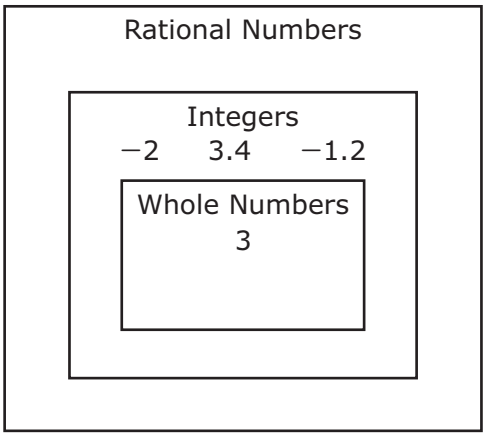
H



G



J



GO ON

33 Which situation **cannot** be represented by the equation $x + 10 = 45$?

A Marissa spent \$45 on a hat and a shirt. The hat cost \$10. What is x, the cost of the shirt in dollars?

B Nicholas rode his bike 45 miles last week. He rode 10 miles on Tuesday and the rest of the miles on Wednesday. What is x, the number of miles Nicholas rode his bike on Wednesday?

C Two players scored a total of 45 points in a game. One player scored 10 points. What is x, the number of points scored by the other player?

D There are 45 students in a group. There are also 10 adults in the group. What is x, the total number of students and adults in the group?

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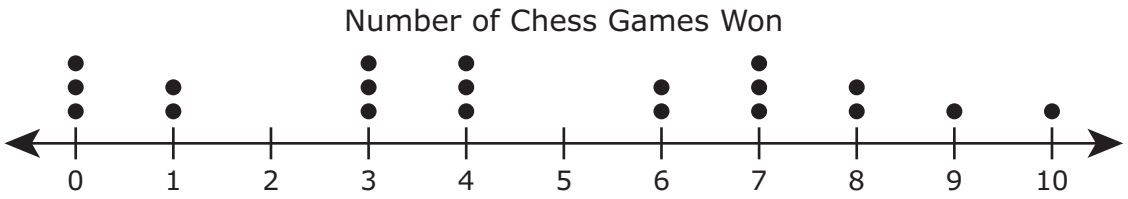
34 The dot plot shows the number of chess games won by each of the 20 students in a competition.



Which statement about the data is true?

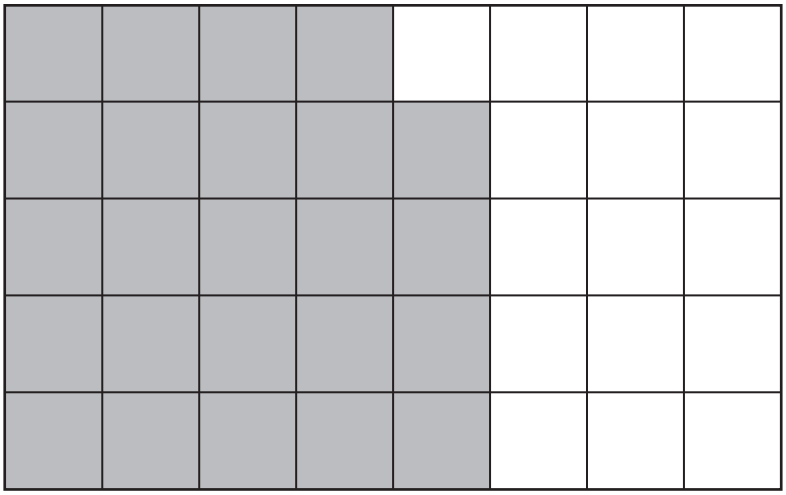
F The median is 4, and the interquartile range is 10.

G The median is 4, and the interquartile range is 5.

H The median is 5, and the interquartile range is 10.

J The median is 5, and the interquartile range is 5.

35 The shaded area on the grid represents the part of a rectangular wall that was painted. Each small square on the wall has the same dimensions.



What percentage of the wall was painted?

A 64%

B 24%

C 60%

D 16%

36 Before Nina bought groceries on April 22, she had a balance of $487.25 in her checking account. Nina wrote her transactions in her check register. She included all her transactions through the end of the day on April 23.

Nina's Check Register

Date	Description	Deposits (dollars)	Withdrawals (dollars)	Balance (dollars)
				487.25
4/22	Groceries		72.50	
4/23	Cash deposit	15.00		

Based on the transactions in Nina's check register, what is the balance in dollars and cents in her checking account at the end of the day on April 23?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

---

37 Which table shows only values that represent the following relationship between q and r?

$$r = q + 10.1$$

A

q	*r*
5	50.5
7	70.7
9	90.9
11	111.1

C

q	*r*
5	10.6
7	10.8
9	11.0
11	11.2

B

q	*r*
5	15.1
7	17.1
9	19.1
11	21.1

D

q	*r*
5	15.1
7	15.3
9	15.5
11	15.7

38 A recipe for cookies requires $\frac{2}{3}$ cup of butter. Rama wants to make $\frac{3}{4}$ of the recipe. How many cups of butter should Rama use to make the cookies?

F $1\frac{5}{12}$ c

G $\frac{8}{9}$ c

H $\frac{1}{12}$ c

J $\frac{1}{2}$ c

---

39 A robot's height is 1 meter 20 centimeters. How tall is the robot in millimeters?

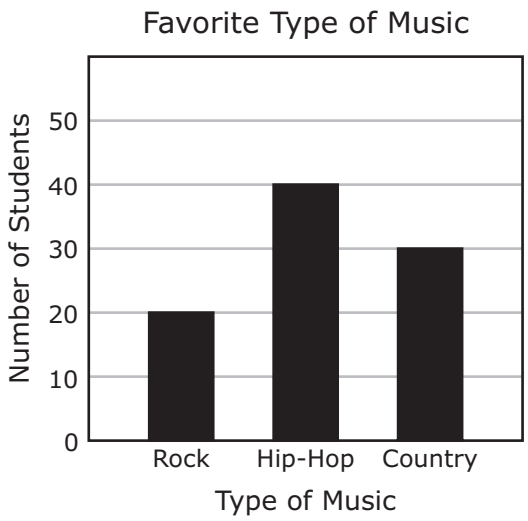
A 1,200 millimeters

B 1,020 millimeters

C 120 millimeters

D Not here

40 Aiden asked a group of students to choose their favorite type of music from the choices of rock, hip-hop, and country. The results of the survey are shown in the graph.



Based on the graph, how many students in a class of 360 students would be expected to choose hip-hop or rock as their favorite type of music?

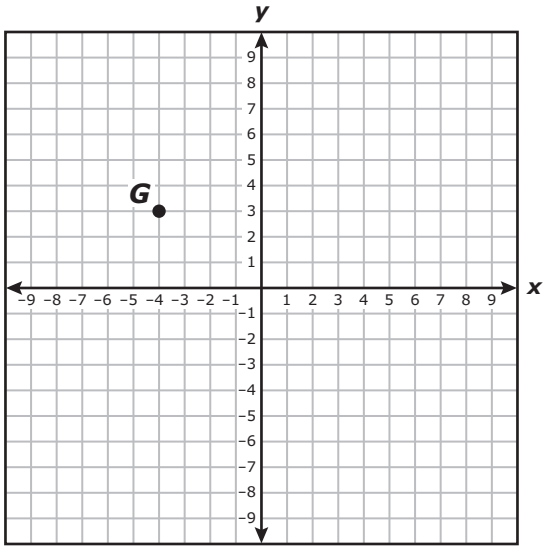
F 240

G 80

H 60

J 180

41 Benisha graphed point *G* on the coordinate grid. She will graph point *H* at a location 5 units away from point *G*.



Which ordered pair could represent the location of point *H*?

A (−4, 5)

B (−9, 8)

C (1, 3)

D (−4, −1)

---

42 A restaurant offered cooking classes on 24 of the 30 days in November. What decimal is equivalent to the fraction of days in November that classes were offered at the restaurant?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

43 Shemar bought a bag of marbles. He took the marbles out of the bag one at a time. He recorded the color of each marble in this tally chart.

Marbles

Color	Number of Marbles
Black	𝍸 𝍸 𝍸
Yellow	𝍸 𝍸
Green	𝍸 𝍸 ll
Red	𝍸
White	𝍸 lll

In which table do the percentages represent the relative frequency of these marble colors?

A

Marbles

Color	Percentage of All Marbles
Black	15%
Yellow	10%
Green	12%
Red	5%
White	8%

B

Marbles

Color	Percentage of All Marbles
Black	15%
Yellow	25%
Green	37%
Red	42%
White	50%

C

Marbles

Color	Percentage of All Marbles
Black	10%
Yellow	16%
Green	20%
Red	24%
White	30%

D

Marbles

Color	Percentage of All Marbles
Black	30%
Yellow	20%
Green	24%
Red	10%
White	16%

44 The cost of downloading one song from a website is $0.99. Which equation can be used to find t, the cost in dollars of downloading n songs?

F $t = 0.99 + n$

G $n = 0.99 + t$

H $t = 0.99n$

J $n = 0.99t$

---

45 Students in Mrs. Guerro's class must complete at least 40 math problems for homework every week. The table shows the progress of four students on Wednesday.

Homework Progress

Student	Amount Completed
Katie	0.4
D'Angelo	$\frac{45}{40}$
Grace	100%
Jonah	$\frac{2}{3}$

Which list shows the amounts of homework completed in order from greatest to least?

A 0.4, $\frac{2}{3}$, $\frac{45}{40}$, 100%

B $\frac{45}{40}$, 100%, $\frac{2}{3}$, 0.4

C 0.4, $\frac{2}{3}$, 100%, $\frac{45}{40}$

D $\frac{2}{3}$, 0.4, $\frac{45}{40}$, 100%

46 What is the prime factorization of 110?

F $5^2 \cdot 11$

G $2^5 \cdot 11$

H $5 \cdot 22$

J $2 \cdot 5 \cdot 11$

---

47 In 2012 there were approximately 8,950 public libraries in the United States. A survey found that 76% of those libraries offered free access to electronic books. Based on this information, how many public libraries offered free access to electronic books in 2012?

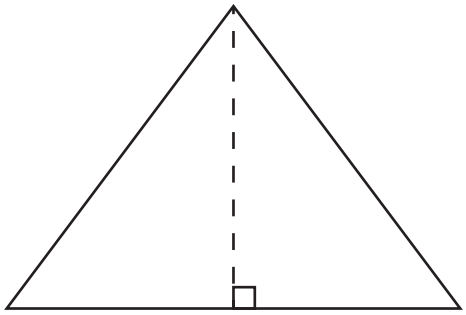
A 8,190

B 118

C 6,802

D 760

48 Ms. Chen will paint a triangular tile. A drawing of the tile is shown. Use the ruler provided to measure the dimensions of the tile to the nearest centimeter.



Which measurement is closest to the area of the tile in square centimeters?

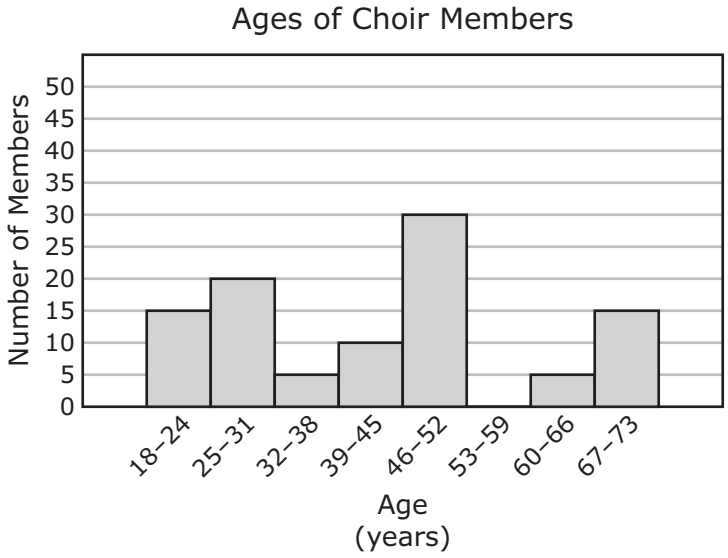
F 12 cm^2

G 24 cm^2

H 15 cm^2

J 30 cm^2

49 A choir director made a histogram showing the ages of the members of the choir.



Which statement about the data in the histogram must be true?

A More than half the members are from 46 to 73 years old.

B There are more men than women in the choir.

C The choir has a total of 100 members.

D Exactly 20 members are less than 32 years old.

---

50 A student needs to collect at least 10 flowers for a science project. The student has already collected 3 flowers. The inequality shown can be used to find n, the number of flowers the student still needs.

$$n + 3 \geq 10$$

Which inequality represents the solution set for this situation?

F $n \leq 13$

G $n \geq 13$

H $n \leq 7$

J $n \geq 7$

51 To make pink paint, Sylvia mixes 7 cups of white paint to every 3 cups of red paint. Which table shows possible values of w, the number of cups of white paint Sylvia uses, and r, the number of cups of red paint?

A

Pink Paint

White Paint, w (cups)	7	49	343	2,401
Red Paint, r (cups)	3	9	27	81

B

Pink Paint

White Paint, w (cups)	7	8	9	10
Red Paint, r (cups)	3	4	5	6

C

Pink Paint

White Paint, w (cups)	7	14	21	28
Red Paint, r (cups)	3	6	9	12

D

Pink Paint

White Paint, w (cups)	7	6	5	4
Red Paint, r (cups)	3	4	5	6

52 Which two expressions are equivalent?

F $9(6 + x)$
$9 \cdot 6 + 9 \cdot x$

G $x + (8 \cdot 9)$
$(x + 8) \cdot 9$

H $8 \cdot 6 \div x$
$8 \cdot x \div 6$

J $6 \cdot x + 3$
$6 \cdot (x + 3)$

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS ON THE ANSWER DOCUMENT.

STOP

STAAR
GRADE 6
Mathematics
May 2016