



State of Texas Assessments of Academic Readiness

GRADE 6

Mathematics

Practice Assessment

STAAR GRADE 6 MATHEMATICS REFERENCE MATERIALS



AREA

Triangle

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

Rectangle or parallelogram

$$A = bh$$

Trapezoid

$$A = \frac{1}{2}(b_1 + b_2)h$$

VOLUME

Rectangular prism

$$V = Bh$$

Inches

0

1

2

3

4

5

6

7

8

STAAR GRADE 6 MATHEMATICS REFERENCE MATERIALS



LENGTH

Customary

1 mile (mi) = 1,760 yards (yd)

1 yard (yd) = 3 feet (ft)

1 foot (ft) = 12 inches (in.)

Metric

1 kilometer (km) = 1,000 meters (m)

1 meter (m) = 100 centimeters (cm)

1 centimeter (cm) = 10 millimeters (mm)

VOLUME AND CAPACITY

Customary

1 gallon (gal) = 4 quarts (qt)

1 quart (qt) = 2 pints (pt)

1 pint (pt) = 2 cups (c)

1 cup (c) = 8 fluid ounces (fl oz)

Metric

1 liter (L) = 1,000 milliliters (mL)

WEIGHT AND MASS

Customary

1 ton (T) = 2,000 pounds (lb)

1 pound (lb) = 16 ounces (oz)

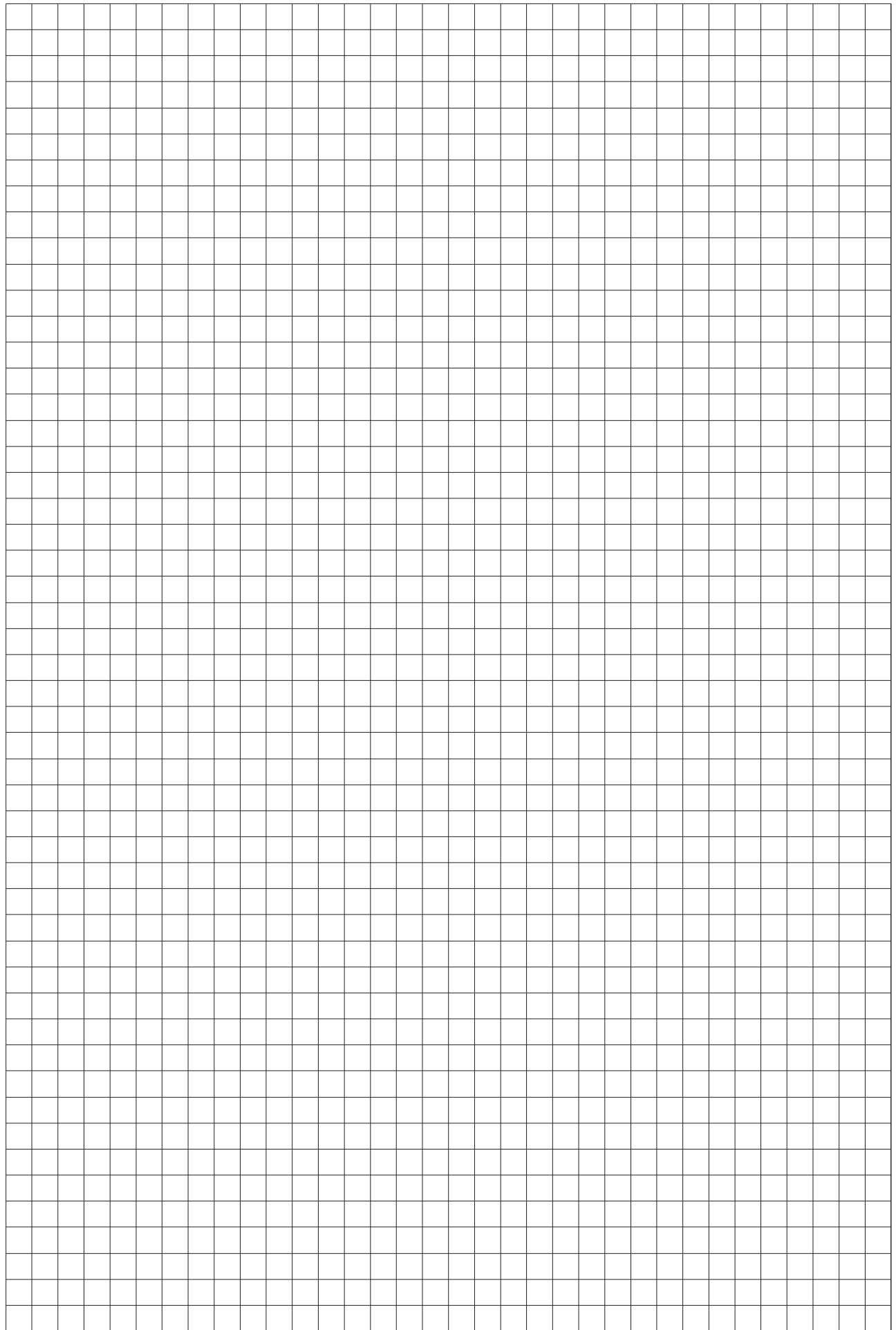
Metric

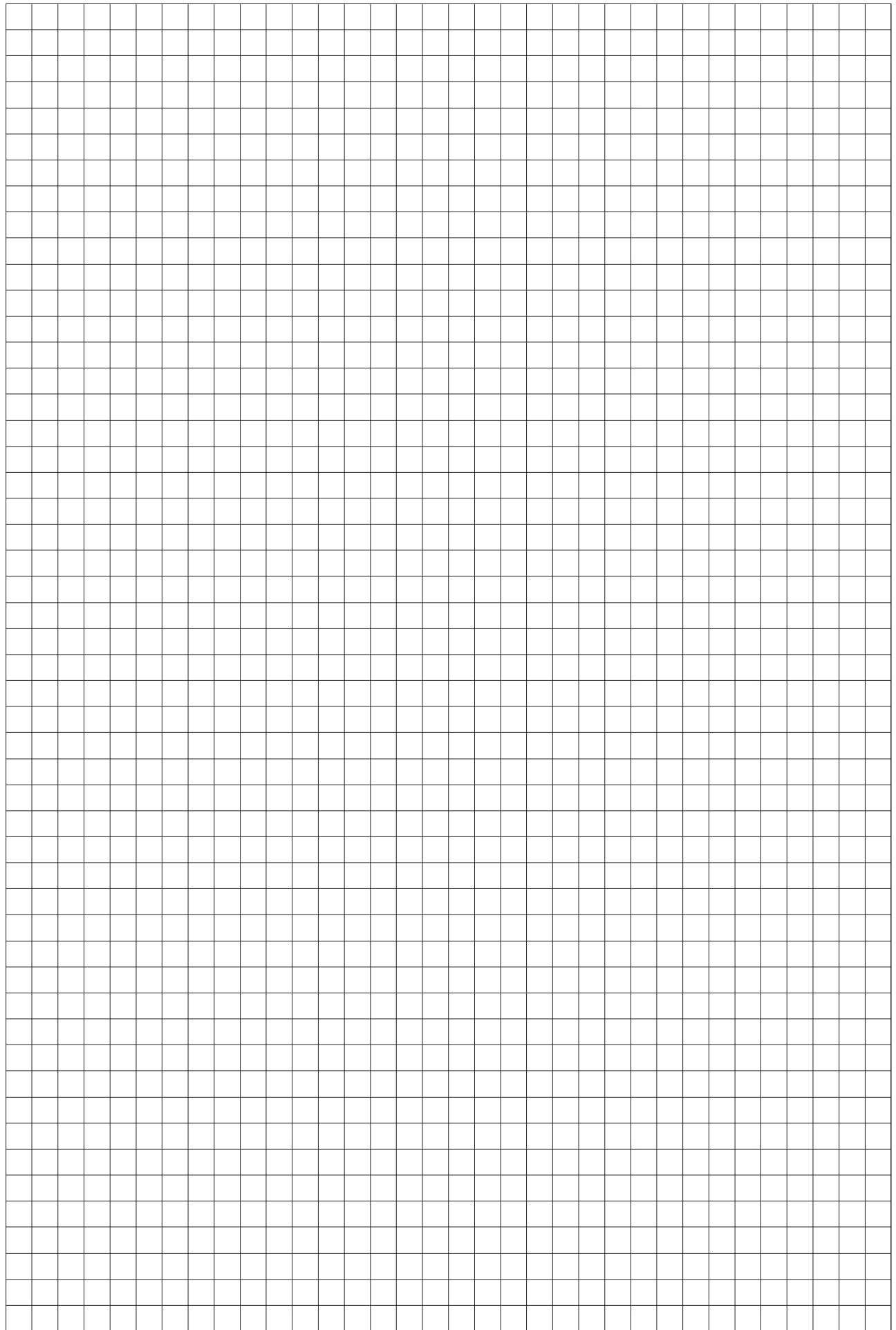
1 kilogram (kg) = 1,000 grams (g)

1 gram (g) = 1,000 milligrams (mg)

20
19
18
17
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Centimeters





MATHEMATICS

DIRECTIONS

Read each question carefully. Choose the best answer to each question. For open-response questions, determine the best answer to the question.

1 Which expression is equivalent to $5(x - 3)$?

- (A) $5x - 3$
 - (B) $2x$
 - (C) $x - 15$
 - (D) $5x - 3(5)$
-

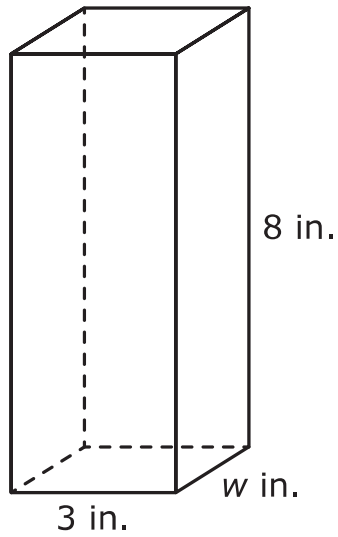
2 A skills test has 20 questions. This list shows the number of points that can be earned on each question:

- Correct answer: +3 points
- Incorrect answer: -1 point
- No answer: -2 points

When Frieda took the skills test, she answered 12 questions correctly and 5 questions incorrectly, and she did not answer the rest of the questions. What was the total number of points Frieda earned?

- (A) 25
- (B) 31
- (C) 12
- (D) 20

- 3 The figure shows a right rectangular prism with its dimensions in inches.



Complete each statement about the prism.

Select the correct answer for each box. Each answer may be used more than once. Not all answers will be used.

A $w + 3$

B $2(w + 3)$

C $3w$

D $8(3)(w)$

E $8 + 3w$

F $8 + 3 + w$

The area of the base of the prism is square inches.

The volume of the prism is cubic inches.

4 Which inequality represents all possible values for x in $-2x > -48$?

- (A) $x < -24$
- (B) $x < 24$
- (C) $x > -24$
- (D) $x > 24$

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

Checking Account Fees at Two Banks

Bank	Monthly Fee
F	\$8 when the average daily balance is less than \$500; no fee when it is \$500 or more
K	\$12 when the average daily balance is less than \$750; no fee when it is \$750 or more

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

- (A) The fee at Bank K will be greater than the fee at Bank F whenever the average daily balance is less than \$750.
- (B) The fee at Bank K will always be less than the fee at Bank F.
- (C) The fee at Bank K will always be greater than the fee at Bank F.
- (D) The fee at Bank K will be less than the fee at Bank F only when the average daily balance of \$750 is maintained.

- 6 What value is equivalent to this expression?

$$4^2 - 6(7 - 10)$$

- (A) 7
 - (B) -12
 - (C) 34
 - (D) -36
-

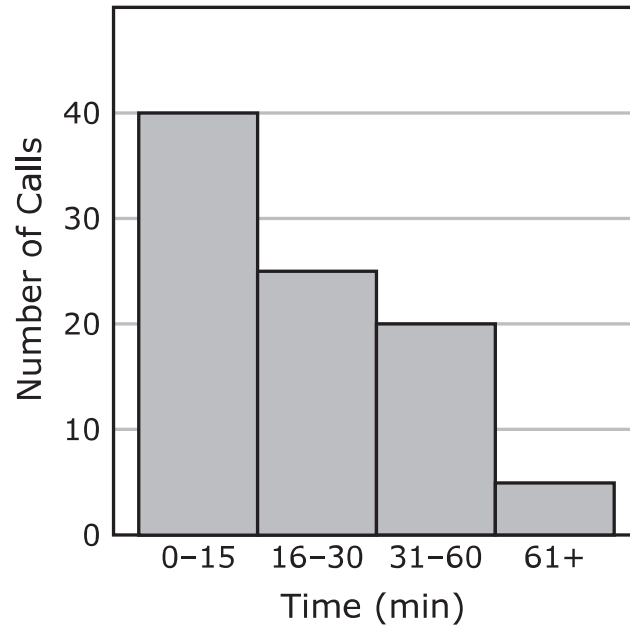
- 7 Which statement describes the relationship between x and y in these two equations?

$$y = x + 8$$
$$y = 8x$$

- (A) In $y = 8x$ and in $y = x + 8$, the value of y is 8 more than the value of x .
- (B) In $y = 8x$ and in $y = x + 8$, the value of y is 8 times the value of x .
- (C) In $y = 8x$ the value of y is 8 more than the value of x , and in $y = x + 8$ the value of y is 8 times the value of x .
- (D) In $y = 8x$ the value of y is 8 times the value of x , and in $y = x + 8$ the value of y is 8 more than the value of x .

- 8 The histogram shows the time in minutes it took for a business to resolve customer service issues that were called in.

Resolving Customer Service Issues



Determine whether each statement is true or false based on the data in the histogram.

Select **ONE** correct answer in each row.

Resolving Customer Service Issues

Statement	True	False
It took between 16 and 30 minutes to resolve issues for each of 30 calls.	(A)	(B)
It took more than 30 minutes to resolve issues for each of 25 calls.	(A)	(B)
The greatest number of customer service issues were resolved in 61 minutes or more.	(A)	(B)

- 9** A total of 96 dogs and cats were taken to a veterinarian's office last week. The ratio of dogs to cats was 3:5.

How many of the animals taken to the veterinarian's office were cats?

- (A) 31
 - (B) 12
 - (C) 60
 - (D) 88
-

- 10** A study showed that 75% of people who joined a gym did so in January.

Which value is equivalent to 75%?

- (A) $\frac{3}{4}$
- (B) 75
- (C) $\frac{1}{4}$
- (D) 7.5

11 Which expressions have a value of 15.4?

Select **TWO** correct answers.

- $5.4 \left(3\frac{2}{3}\right)$
 - $45.12 \div \frac{1}{3}$
 - $3.85 \div 0.25$
 - $30.8 (2.5)$
 - $9.24 \div \frac{3}{5}$
-

12 What is the value of the expression shown?

$$|7|$$

- (A) -7
- (B) 7
- (C) $-\frac{1}{7}$
- (D) $\frac{1}{7}$

- 13** The cost of 54 tickets to a water park is \$972. Each ticket costs the same amount.

Which table or equation represents the relationship between the number of tickets, t , and the total cost of the tickets, c ?

Select **TWO** correct answers.

- $t = 18c$ $c = 54t$ $t = 54c$ $c = 18t$

- | t | c |
|-----|-----|
| 12 | 216 |
| 15 | 270 |
| 18 | 324 |

t	c
10	540
12	648
14	756

-
- 14** Some homeowners were asked which kind of repair they made on their home most recently. The table shows the data collected.

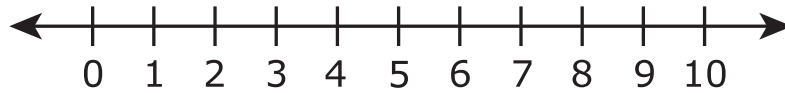
Home Repairs

Repair	Number of Homeowners
Roof	8
Windows	5
Plumbing	15
Air conditioner	12

Which kind of repair represents the mode of the data in the table?

- (A) Roof
(B) Windows
(C) Plumbing
(D) Air conditioner

- 15** A student is drawing a ray on the number line shown to represent the solution to the inequality $10x > 60$.



Describe the ray that the student should draw.

Select **ONE** correct answer in each box to complete each sentence.

The endpoint of the ray should be

<input type="radio"/> (A) an open
<input type="radio"/> (B) a solid

 circle placed on 6.

The endpoint at 6

<input type="radio"/> (A) is
<input type="radio"/> (B) is not

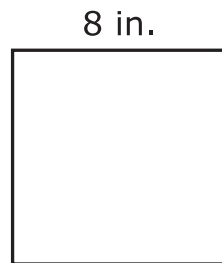
 part of the solution set.

The ray should point to the

<input type="radio"/> (A) left
<input type="radio"/> (B) right

.

-
- 16** The square shown has a perimeter of 32 inches.



What is the perimeter of the square in feet?

- (A) 2 ft
- (B) $\frac{3}{8}$ ft
- (C) 4 ft
- (D) $2\frac{2}{3}$ ft

17 What is the prime factorization of 126?

- (A) 6×21
- (B) $2 \times 3^2 \times 7$
- (C) 3×42
- (D) $3^2 \times 14$

18 The table shows the relationship between h , the number of hours Traci worked and p , the amount she was paid for working those hours.

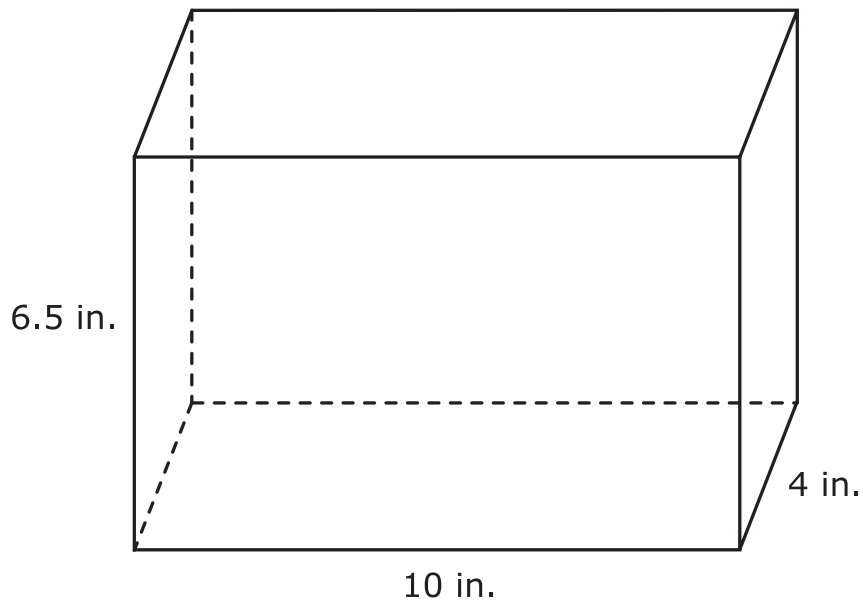
Amount Paid

Hours, h	Amount Paid, p
8	\$120.00
10.5	\$157.50
12	\$180.00

Which equation represents the relationship between h and p ?

- (A) $p = 15h$
- (B) $p = h + 2.5$
- (C) $h = p + 2.5$
- (D) $h = 15p$

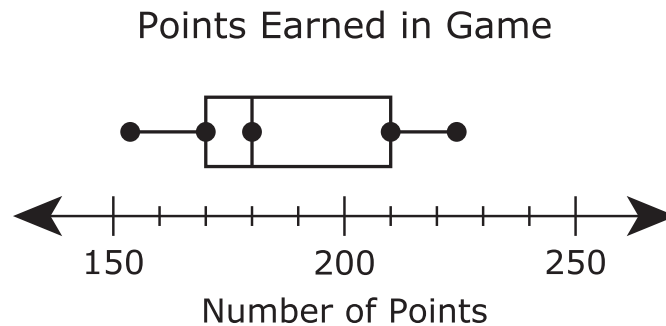
19 The dimensions of a right rectangular prism are shown in inches.



What is the volume of the right rectangular prism in cubic inches?

- (A) 40 in.^3
- (B) 160 in.^3
- (C) 28 in.^3
- (D) 260 in.^3

- 20** A company asked 100 people to test a new computer game. The box plot represents data about the number of points each person earned in the game.



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

- (A) The greatest number of points earned was 250.
 - (B) About half of the players earned between 180 and 225 points.
 - (C) The least number of points earned was 170.
 - (D) At least one player earned exactly 180 points.
-

- 21** A researcher asked 120 people if they preferred swimming in a pool or swimming at the beach. The data collected showed that 2 out of 10 people preferred swimming at the beach.

What was the total number of people who preferred swimming at the beach?

- (A) 12
- (B) 60
- (C) 2
- (D) 24

22 Ricardo plans to pay for college by using his savings along with scholarships, grants, and work-study programs. Which source of funding does Ricardo have the greatest amount of personal control over?

- (A) Savings
 - (B) Scholarships
 - (C) Grants
 - (D) Work-study programs
-

23 The owner of a food truck noted that 7 out of 8 customers ordered a drink with their lunch. What decimal is equivalent to the fraction of customers who ordered a drink with their lunch?

Record your answer in the space provided.

24 Which situation can be represented by the equation $x - 8 = 24$?

- (A) Gael and Jules go to the same school. Gael lives 8 blocks closer to the school than Jules does. If Gael lives 24 blocks from the school, what is x , the number of blocks from the school that Jules lives?
 - (B) Gael and Jules go to the same school. Gael lives 24 blocks closer to the school than Jules does. If Gael lives 8 blocks from the school, what is x , the number of blocks from the school that Jules lives?
 - (C) A worker arranged 24 boxes on 8 shelves with the same number of boxes on each shelf. What is x , the number of boxes on each shelf?
 - (D) A worker arranged a total of x boxes on 24 shelves. The worker placed 8 boxes on each shelf. What is x , the total number of boxes arranged on shelves?
-

25 The pressure in a tank was compared to standard each morning for 5 days. The table shows the data recorded.

Pressure Compared to Standard

Day	Difference from Standard
Monday	-0.2
Tuesday	0.08
Wednesday	-1.3
Thursday	-0.18
Friday	0.13

Which list shows the values in the table from least to greatest?

- (A) 0.08 0.13 -0.18 -0.2 -1.3
- (B) 0.08 0.13 -0.2 -1.3 -0.18
- (C) -1.3 -0.2 -0.18 0.08 0.13
- (D) -1.3 -0.18 0.13 0.08 -0.2

26 Triangle XYZ has these measures:

- Angle X has a measure of 36.2° .
- Angle Y has a measure of 98° .

What is the measure of angle Z in degrees?

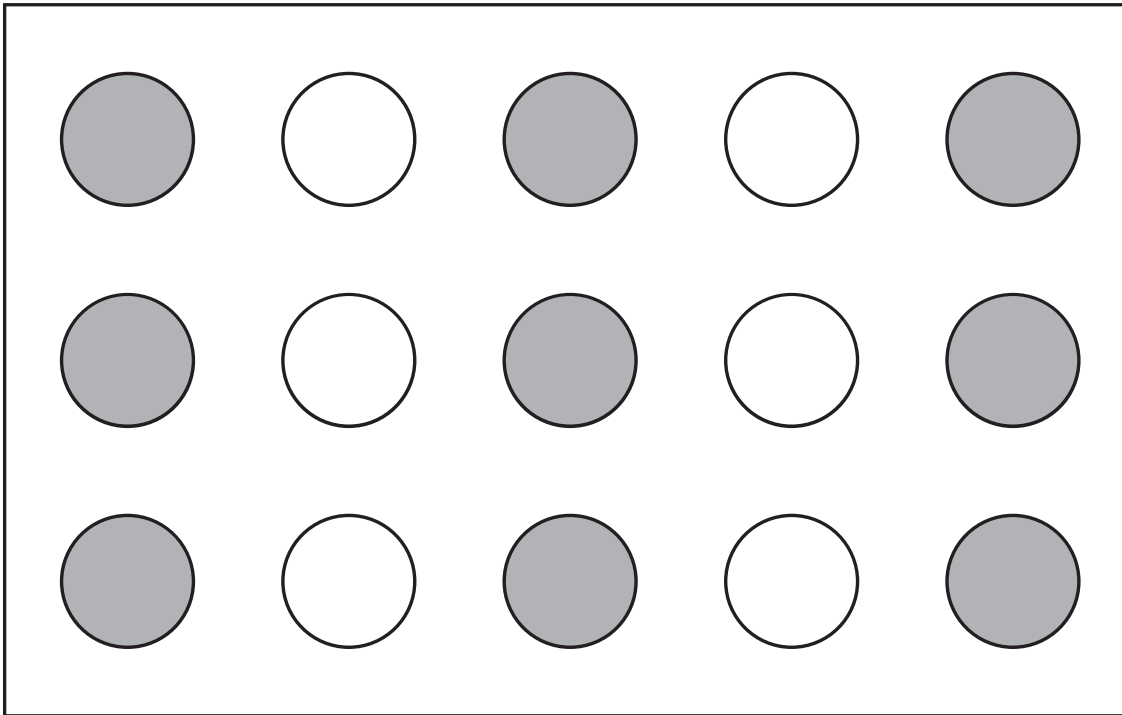
- (A) 134.2°
(B) 45.8°
(C) 225.8°
(D) 55.8°
-

27 Jonah recorded the temperature outside for 7 hours. The temperature dropped 3 degrees each hour for the first 6 hours and then rose by 2 degrees in the last hour. The expression $(-3)(6) + 2$ represents the net change in temperature over the 7 hours.

What value represents the net change in temperature in that time?

- (A) -20
(B) -16
(C) 20
(D) 16

28 The game board shown has shaded circles and unshaded circles.



What fraction and percentage represent the portion of the game board circles that are shaded?

Select the correct answer for each box. Not all answers will be used.

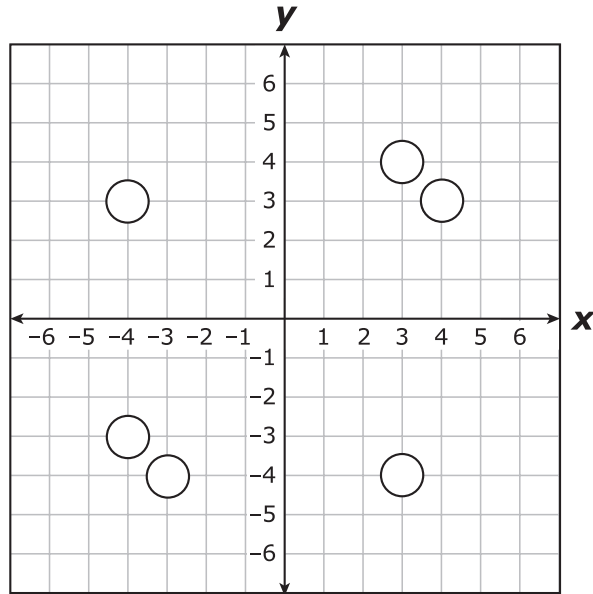
A $\frac{6}{15}$ **B** $\frac{9}{10}$ **C** $\frac{3}{5}$ **D** 90% **E** 40% **F** 60

Fraction:

Percentage:

- 29 What are the locations of points $(4, 3)$ and $(3, -4)$ on the coordinate grid?

Shade the **TWO** correct circles that represent the points.



-
- 30 Which expression can be used to find the value of $\frac{3}{2} \div \frac{1}{8}$?

- (A) $\frac{3}{2} \cdot \frac{8}{1}$
- (B) $\frac{2}{3} \cdot \frac{8}{1}$
- (C) $\frac{2}{3} \cdot \frac{1}{8}$
- (D) $\frac{3}{2} \cdot \frac{1}{8}$

31 Which information would typically appear on a consumer's credit report?

- (A) The cost of tuition at the consumer's chosen college
 - (B) The name of the consumer's employer
 - (C) The balance owed on the consumer's credit cards
 - (D) The value of the consumer's home
-





32 What value of x makes this equation true?

$$x + 72.08 = 106.7$$

Record your answer in the space provided.

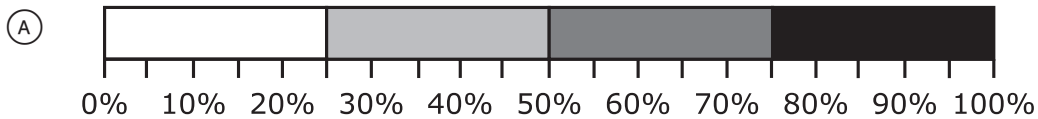
- 33** A news agency predicted the number of votes each of the four candidates for mayor would receive. The table shows the predictions.

Predicted Votes

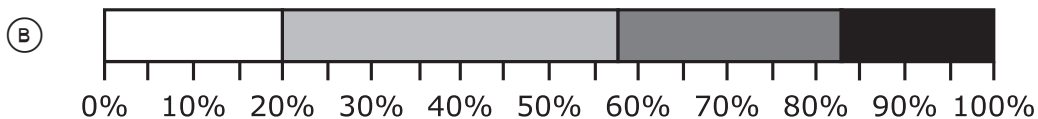
Candidate	Number of Votes	Key for Graph
Adams	8,000	
Carter	15,000	
Mendoza	10,000	
Reza	7,000	

Which percentage bar graph represents this data?

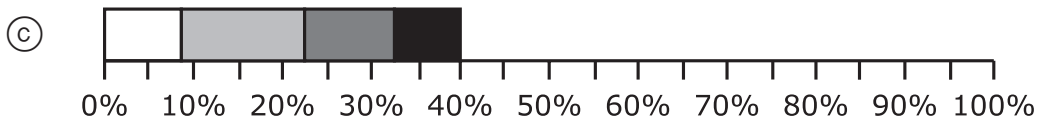
Predicted Votes



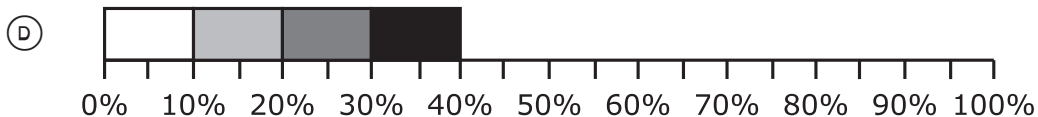
Predicted Votes



Predicted Votes



Predicted Votes



34 A store manager determined that 78% of customers who make a purchase pay with a credit card. Based on that information, how many customers out of 1,500 will pay with a credit card?

- (A) 117
 - (B) 1,170
 - (C) 780
 - (D) 1,422
-

35 How many liters is 250 milliliters?

- (A) 0.025 L
 - (B) 2.5 L
 - (C) 0.25 L
 - (D) 25,000 L
-

36 Which list of values is in order from greatest to least?

- (A) -0.64 $-\frac{2}{3}$ 0.21 1.23 $\frac{9}{5}$
- (B) $\frac{9}{5}$ 1.23 $-\frac{2}{3}$ -0.64 0.21
- (C) 1.23 $\frac{9}{5}$ 0.21 $-\frac{3}{2}$ -0.64
- (D) $\frac{9}{5}$ 1.23 0.21 -0.64 $-\frac{2}{3}$



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