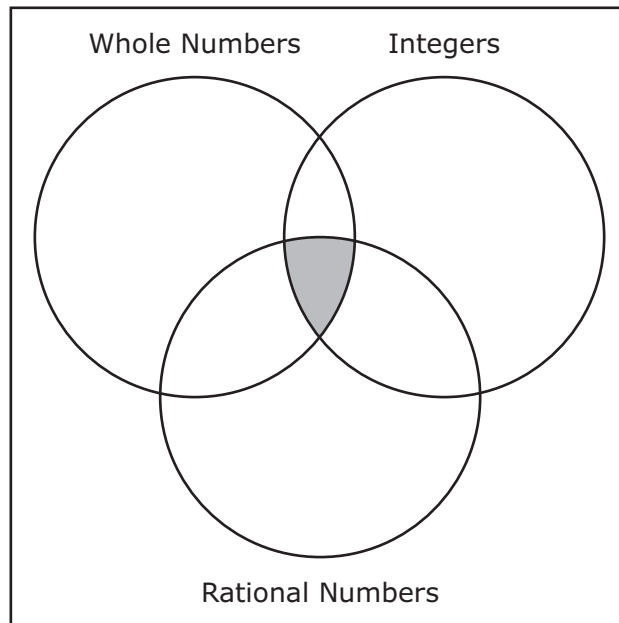


# MATHEMATICS

# Grade 6

2015 Released Test Questions

- 1 Three sets of numbers are shown in the Venn diagram.



Which of these numbers can be placed in the shaded area of the diagram?

- A** -5
- B** 3.5
- C**  $\frac{1}{2}$
- D** Not here

- 2 A store manager analyzed the change in sales of various products from last month to this month. The percent increases and decreases in sales are shown in the table.

Changes in Sales

| Product | Change in Sales (%) |
|---------|---------------------|
| Watches | -0.3                |
| Ties    | 3                   |
| Shoes   | 2.91                |
| Shirts  | -0.9                |
| Pants   | -1.01               |

These values will be ordered from greatest to least. Which list of the products matches this order?

- A** Pants, shirts, watches, shoes, ties
- B** Ties, shoes, watches, shirts, pants
- C** Watches, shirts, pants, shoes, ties
- D** Ties, shoes, pants, shirts, watches
- 
- 3 Which two expressions each represent  $\frac{3}{12}$ ?

- A**  $3\overline{)12}$  and  $3 \div 12$
- B**  $12\overline{)3}$  and  $12 \div 3$
- C**  $12\overline{)3}$  and  $3 \div 12$
- D**  $3\overline{)12}$  and  $12 \div 3$

4 A coat is discounted 40% off its regular price. Which value is equivalent to 40%?

A  $\frac{1}{25}$

B 0.004

C 40

D  $\frac{2}{5}$

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5 What value is equivalent to  $3^4 - 2^3 \cdot (5 - 2) - 60$ ?

A -3

B -66

C 159

D -21

6 Which of these can be written as an equation?

- A Two times 0.75 plus  $m$
- B Three is less than twice  $a$
- C Half the product of five and  $j$
- D Four times  $n$  is 24

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7 Which expression is equivalent to  $3(x + 6)$ ?

- A  $3 + x + 3 + 6$
- B  $3x + 6$
- C  $3 + x + 6$
- D  $3x + 18$

8 Which expression is equivalent to  $\frac{8}{9} \div \frac{3}{4}$ ?

A  $\frac{8}{4} \cdot \frac{9}{3}$

B  $\frac{8}{9} \cdot \frac{4}{3}$

C  $\frac{9}{8} \cdot \frac{3}{4}$

D  $\frac{9}{8} \cdot \frac{4}{3}$

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9 In the expression shown  $p$  represents a rational number.

$$4p$$

What value of  $p$  makes the expression equal a number less than 4?

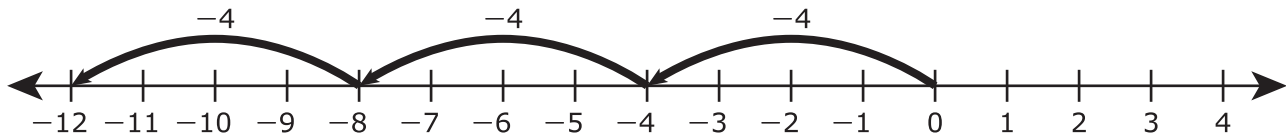
A  $\frac{9}{8}$

B  $\frac{19}{17}$

C  $\frac{7}{8}$

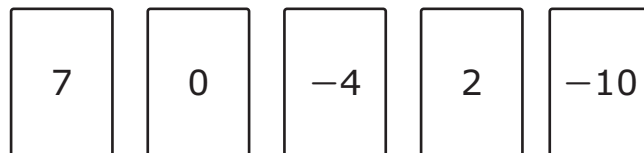
D  $\frac{16}{16}$

10 Which expression is represented on the number line?



- A  $-12 \div -3$
- B  $0 - (-12)$
- C  $-3 \cdot -4$
- D  $3(-4)$

11 Ella played a math game and had the five cards shown.



Her score was the sum of the numbers on these five cards. What was Ella's score?

- A 3
- B 23
- C -5
- D Not here

- 12** A grocery store sells steak for \$6.10 per pound. What would be the cost of  $2\frac{3}{5}$  lb of steak?
- A** \$14.03
  - B** \$8.70
  - C** \$15.86
  - D** \$12.06

- 
- 13** A window washer cleaned 38 windows in 2 hours. At this rate, how many windows did he clean in 7 hours?

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



- 14** The last time Brea played softball, she hit the ball 35% of the times she was at bat. Based on this information, how many times will Brea hit the ball the next time she plays softball if she is at bat 20 times?
- A** 4
- B** 7
- C** 15
- D** 6

- 15** Shaundra made this table in order to show the results of a science experiment.

Plant Growth

| Plant | Amount of Fertilizer Added to Soil (milliliters) | Change in Height of Plant (centimeters) |
|-------|--|---|
| A     | 4  | 0.5                                     |
| B     | 8  | 1.0                                     |
| C     | 1  | 0.15                                    |
| D     | 2  | 0.25                                    |

Which statement about the quantities in Shaundra's experiment is true?

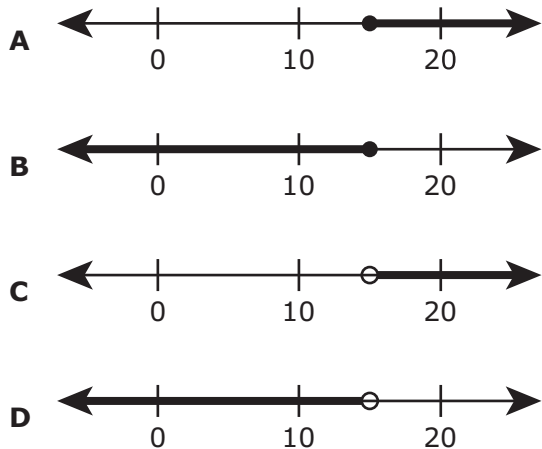
- A** The amount of fertilizer added and the change in the height of the plants are both independent quantities.
- B** The amount of fertilizer added and the change in the height of the plants are both dependent quantities.
- C** The amount of fertilizer added is a dependent quantity, and the change in the height of the plant is an independent quantity.
- D** The amount of fertilizer added is an independent quantity, and the change in the height of the plant is a dependent quantity.

**16** A firefighter uses equipment that weighs 60 pounds. The firefighter weighs  $x$  pounds. Which equation can be used to find  $t$ , the total weight of both the firefighter and his equipment in pounds?

- A**  $t = 60x$
- B**  $t = x + 60$
- C**  $t = 60 - x$
- D**  $t = x - 60$

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**17** Aiko is selling books for \$12 each. She wants to make more than \$180 in book sales. The inequality  $12b > 180$  can be used to determine the number of books,  $b$ , she must sell in order to meet her goal. Which number line best represents the solution to the inequality?



**18** The sum of the measures of two angles is  $183.6^\circ$ . One angle has a measure of  $54^\circ$ . What is  $m$ , the measure in degrees of the second angle?

- A**  $m = 129.6^\circ$
- B**  $m = 3.4^\circ$
- C**  $m = 9,914.4^\circ$
- D**  $m = 237.6^\circ$

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**19** Which inequality is true when  $x = 4$ ?

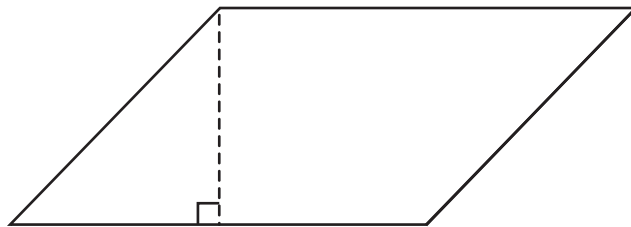
- A**  $-25x > 100$
- B**  $-25x \geq 100$
- C**  $25x < 100$
- D**  $25x \leq 100$

20 Gretta is  $1\frac{1}{2}$  meters tall. Which of the following is equivalent to  $1\frac{1}{2}$  meters?

- A 150 millimeters
- B 1,500 millimeters
- C 100 millimeters
- D 1,000 millimeters

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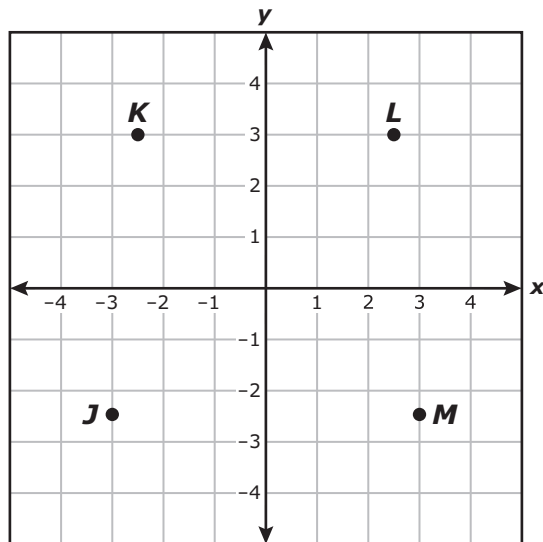
21 Use the ruler provided to measure the dimensions of the parallelogram shown to the nearest 0.5 centimeter.



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

- A  $19 \text{ cm}^2$
- B  $22 \text{ cm}^2$
- C  $16.5 \text{ cm}^2$
- D  $8.5 \text{ cm}^2$

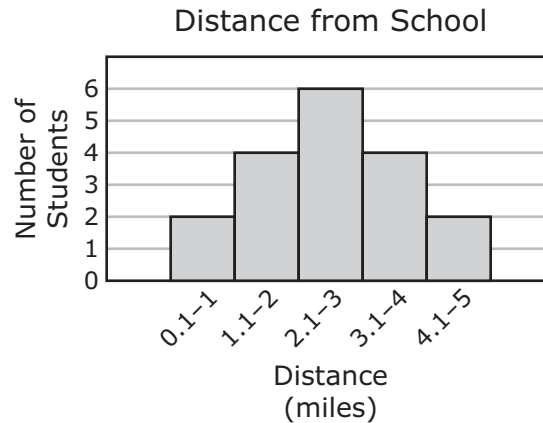
22 The coordinate grid shows points  $J$ ,  $K$ ,  $L$ , and  $M$ .



Which point best represents the ordered pair  $(-2\frac{1}{2}, 3)$ ?

- A Point  $J$
- B Point  $K$
- C Point  $L$
- D Point  $M$

23 The distance in miles that some students live from school is shown in the histogram.







Which statement about the data in the histogram is true?

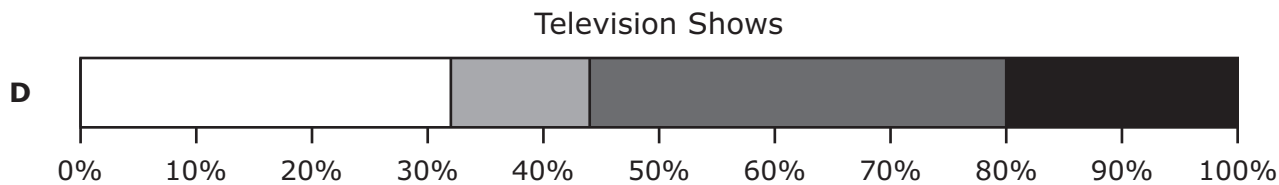
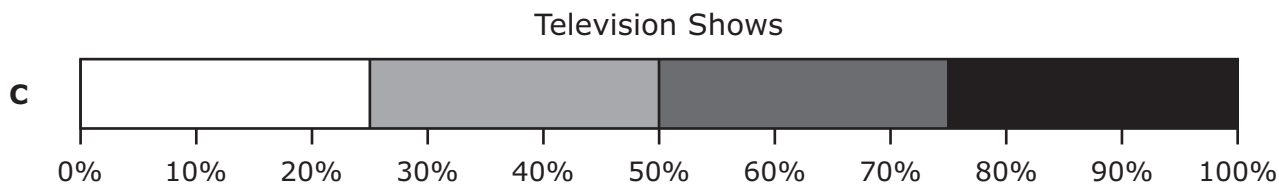
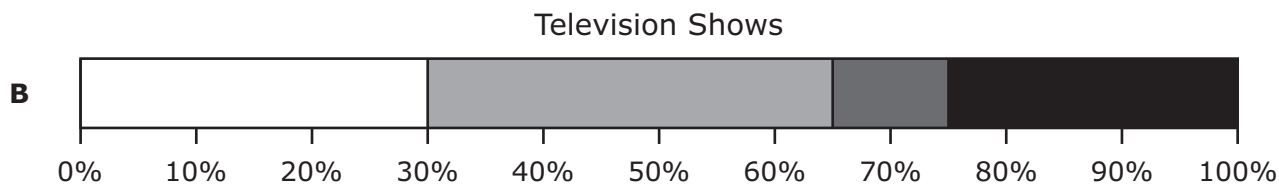
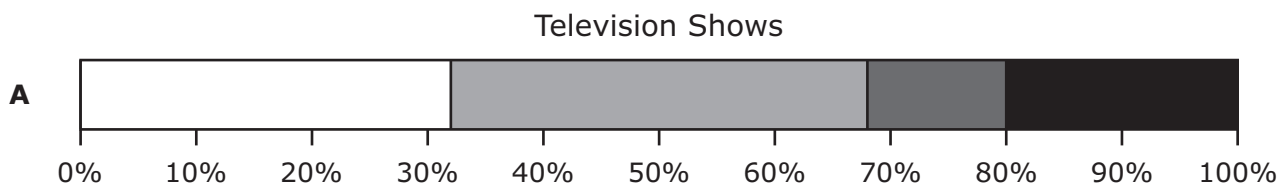
- A** The distribution of the data is asymmetrical, so the mean and the median are likely outside the "2.1-3 mile" category.
- B** The distribution of the data is asymmetrical, so the mean and the median are likely within the "2.1-3 mile" category.
- C** The distribution of the data is symmetrical, so the mean and the median are likely outside the "2.1-3 mile" category.
- D** The distribution of the data is symmetrical, so the mean and the median are likely within the "2.1-3 mile" category.

- 24 As part of a survey, a group of people were asked to name their preferred method of viewing television shows. Their responses are shown in the table.

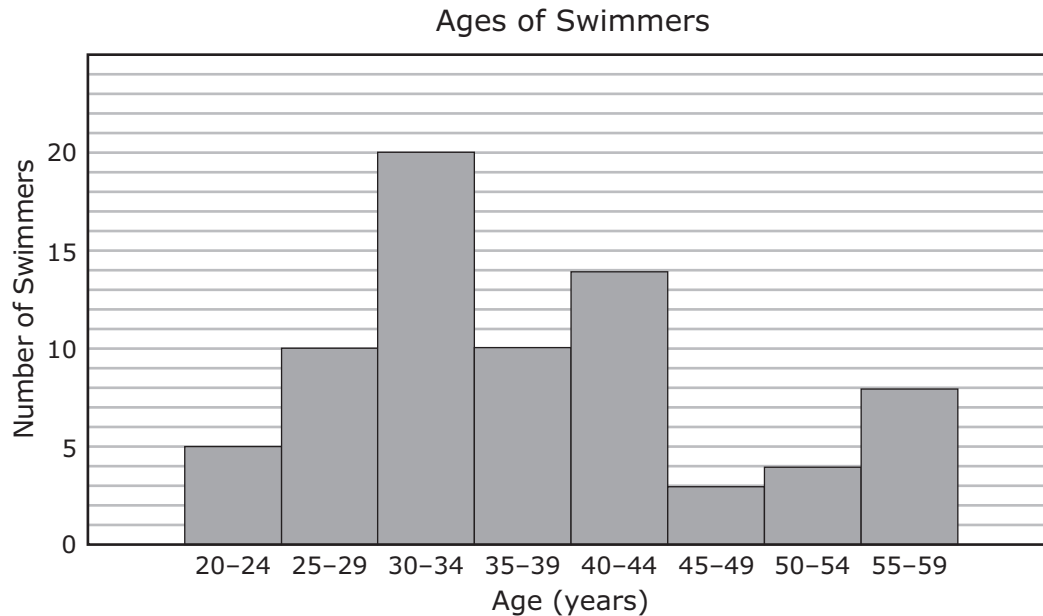
Television Shows

| Viewing Method   | Number of People | Key for Bar Graph  |
|------------------|------------------|--|
| Live             | 8                |  |
| Recorded         | 9                |  |
| On demand        | 3                |  |
| Online streaming | 5                |  |

Which percentage bar graph best represents the data?



- 25 The histogram shows the total number of swimmers in different age groups who participated in a swimming competition.



Based on the histogram, which statement is true?

- A There were 15 swimmers who were younger than 30 years old.
  - B A total of 10 swimmers were 50 years old or older.
  - C The number of swimmers who were 40 years old or older is less than the number of swimmers who were 29 years old or younger.
  - D A total of 70 swimmers participated in the competition.
- 
- 26 Which data most likely have variability for one school during a single school year?
- A The number of students absent each day
  - B The amount of time for a lunch period each day
  - C The library fee for the first day a book is overdue
  - D The cost of a slice of cheese pizza each day



- 27 Which statement best describes purchases made with a debit card?
- A Purchases made with this card are subject to interest.
  - B Purchases made with this card can be paid over time.
  - C Purchases made with this card are withdrawn directly from a bank account.
  - D Purchases made with this card are subject to a credit limit.

- 28 The check register shows the transactions in Ms. Garcia’s new checking account. She opened the account on October 3.

Ms. Garcia’s Check Register

| Date  | Description                   | Deposits (dollars) | Withdrawals (dollars) | Transfers (dollars) | Balance (dollars) |
|-------|-------------------------------|--------------------|-----------------------|---------------------|-------------------|
| 10/3  | Transfer from savings account |                    |                       | 1,100.00            |                   |
| 10/5  | Paycheck                      | 2,500.00           |                       |                     |                   |
| 10/5  | Check #1 (dentist)            |                    | 225.00                |                     |                   |
| 10/7  | Check #2 (phone bill)         |                    | 70.00                 |                     |                   |
| 10/9  | Mortgage payment              |                    | 990.00                |                     |                   |
| 10/11 | ATM—cash                      |                    | 220.00                |                     |                   |

Based on the information in the check register, what is the balance in Ms. Garcia’s check register after the ATM transaction on October 11?

- A \$5,105
- B \$2,095
- C \$3,600
- D \$1,505

- 29 Which of these describes information that can appear in a consumer's credit report?
- A The name of a store where the consumer pays cash for all purchases
  - B The name of a company that gave the consumer a car loan two years ago
  - C The amount of money the consumer will need to borrow in the next five years
  - D The amount of money that the consumer loaned to a family member

- 
- 30 The table shows the average annual salary in dollars based on the minimum level of education required for two occupations.

Occupations

| Occupation   | Average Annual Salary (dollars) | Level of Education Required |
|--------------|---------------------------------|-----------------------------|
| Accountant   | 71,040                          | Bachelor's degree           |
| Tax preparer | 41,700                          | High school diploma         |

Based on the average annual salaries in the table, how much more would an accountant earn than a tax preparer over a 30-year career?

- A \$112,740
- B \$3,382,200
- C \$880,200
- D \$1,251,000

| Item Number | Correct Answer | Reporting Category | Readiness or Supporting | Content Student Expectation | Process Student Expectation |
|-------------|----------------|--------------------|-------------------------|-----------------------------|-----------------------------|
| 1           | D              | 1                  | Supporting              | 6.2(A)                      | 6.1 (B),(E),(F)             |
| 2           | B              | 1                  | Readiness               | 6.2(D)                      | 6.1 (A),(B),(E),(F)         |
| 3           | C              | 1                  | Supporting              | 6.2(E)                      | 6.1 (B),(F)                 |
| 4           | D              | 1                  | Readiness               | 6.4(G)                      | 6.1 (A),(B),(F)             |
| 5           | A              | 1                  | Readiness               | 6.7(A)                      | 6.1 (B),(F)                 |
| 6           | D              | 1                  | Supporting              | 6.7(B)                      | 6.1 (B),(G)                 |
| 7           | D              | 1                  | Readiness               | 6.7(D)                      | 6.1 (B),(F)                 |
| 8           | B              | 2                  | Supporting              | 6.3(A)                      | 6.1 (B),(F)                 |
| 9           | C              | 2                  | Supporting              | 6.3(B)                      | 6.1 (B),(F)                 |
| 10          | D              | 2                  | Supporting              | 6.3(C)                      | 6.1 (B),(D),(F)             |
| 11          | C              | 2                  | Readiness               | 6.3(D)                      | 6.1 (A),(B),(F)             |
| 12          | C              | 2                  | Readiness               | 6.3(E)                      | 6.1 (A),(B),(F)             |
| 13          | 133            | 2                  | Readiness               | 6.4(B)                      | 6.1 (A),(B),(F)             |
| 14          | B              | 2                  | Readiness               | 6.5(B)                      | 6.1 (A),(B),(F)             |
| 15          | D              | 2                  | Supporting              | 6.6(A)                      | 6.1 (A),(B),(E),(G)         |
| 16          | B              | 2                  | Readiness               | 6.6(C)                      | 6.1 (A),(B),(D),(F)         |
| 17          | C              | 2                  | Supporting              | 6.9(B)                      | 6.1 (A),(B),(D),(F)         |
| 18          | A              | 2                  | Readiness               | 6.10(A)                     | 6.1 (B),(F)                 |
| 19          | D              | 2                  | Supporting              | 6.10(B)                     | 6.1 (B),(F)                 |
| 20          | B              | 3                  | Readiness               | 6.4(H)                      | 6.1 (A),(B),(C),(F)         |
| 21          | C              | 3                  | Readiness               | 6.8(D)                      | 6.1 (B),(C),(E),(F)         |
| 22          | B              | 3                  | Readiness               | 6.11(A)                     | 6.1 (B),(E),(F)             |
| 23          | D              | 4                  | Readiness               | 6.12(C)                     | 6.1 (A),(B),(E),(G)         |
| 24          | A              | 4                  | Readiness               | 6.12(D)                     | 6.1 (A),(B),(D),(F)         |
| 25          | A              | 4                  | Readiness               | 6.13(A)                     | 6.1 (A),(B),(E),(G)         |
| 26          | A              | 4                  | Supporting              | 6.13(B)                     | 6.1 (A),(B),(G)             |
| 27          | C              | 4                  | Supporting              | 6.14(B)                     | 6.1 (A),(B),(G)             |
| 28          | B              | 4                  | Supporting              | 6.14(C)                     | 6.1 (A),(B),(E),(F)         |
| 29          | B              | 4                  | Supporting              | 6.14(E)                     | 6.1 (A),(B),(G)             |
| 30          | C              | 4                  | Supporting              | 6.14(H)                     | 6.1 (A),(B),(E),(F)         |