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Please use **ONLY** a Number 2 pencil for this session.

# Session 1

# Mathematics

## **Directions**

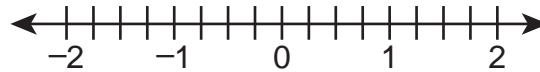
Now you will be taking the Mathematics Summative Assessment. This test has three sessions that contain different types of questions. Today you will take Session 1. Some questions have answer choices that begin with letters. Circle the letter of each correct answer. Other questions will ask you to circle, write or show your answers. Read each question carefully and follow the directions. Mark all your answers in your test booklet. Calculators are not allowed in this session.

1. There were 12 people on a bus. At the first stop, 4 people got off the bus and 6 people got on the bus. Which expression could be used to find the number of people on the bus after the first stop?
- A.  $12 + (-6) + 4$
  - B.  $12 + (-6) + (-4)$
  - C.  $12 + 6 + 4$
  - D.  $12 + 6 + (-4)$
2. Select the **two** numbers equivalent to 0.042.
- A. 0.42%
  - B. 4.2%
  - C. 42%
  - D.  $\frac{42}{1000}$
  - E.  $\frac{42}{100}$
3. A charity needs more than 15 volunteers to help run a fundraising event. Which inequality could be used to represent the number of volunteers,  $v$ , needed for the event?
- A.  $v < 15$
  - B.  $v \leq 15$
  - C.  $v > 15$
  - D.  $v \geq 15$
4. An expression is shown.
- $$60 + 84$$
- The expression is rewritten as  $6(x + y)$ . What is the value of  $x + y$ ?
- A. 10
  - B. 24
  - C. 74
  - D. 94

5. Scott earns \$15 for each birdhouse that he sells. He uses the expression  $15x$  to calculate his earnings, in dollars. What is the meaning of the variable  $x$  in Scott's expression?
- A. the number of birdhouses he sells
  - B. the total amount of money he earns
  - C. the amount of money he earns per birdhouse
  - D. the number of hours it takes to make each birdhouse

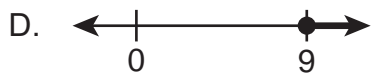
6. What is the distance, in units, between the points  $(2, 3)$  and  $(2, -6)$  on a coordinate plane?
- A. 3
  - B. 5
  - C. 9
  - D. 11

7. Plot a point to show the location of  $-1\frac{3}{4}$  on the number line.

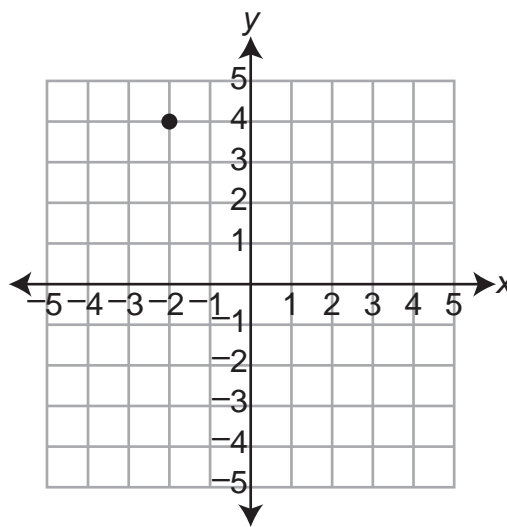


8. Select the **three** statistical questions.
- A. What is your age?
  - B. What time does school start?
  - C. How many pets does your friend have?
  - D. How many siblings does each student in your class have?
  - E. What is the eye color of each person in your after-school club?
  - F. How many servings of fruit does each person in your school eat at lunch?
9. Jesse's new pool holds 1,624 gallons of water. He can fill the pool at a rate of 112 gallons per hour. How many hours will it take Jesse to fill his pool?

10. Which graph represents the solution set for the inequality  $x \geq 9$ ?



11. The point  $(-2, 4)$  is plotted on the coordinate plane.



The point is reflected across the  $y$ -axis. What are the coordinates of the reflected point?

- A.  $(-2, -4)$
- B.  $(-2, 4)$
- C.  $(2, -4)$
- D.  $(2, 4)$

12. Which number is equivalent to  $\frac{7}{12} \div \frac{8}{3}$ ?

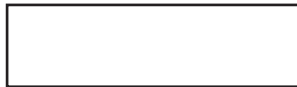
A.  $\frac{7}{32}$

B.  $\frac{9}{14}$

C.  $\frac{14}{9}$

D.  $\frac{32}{7}$

13. The length of a certain rectangle is 5 units more than the width. Write an equation that represents the length,  $l$ , in terms of the width,  $w$ , for this rectangle.



14. Four teams participate in a chess tournament each year. Each team consists of one adult and one child. Each team records the difference in the number of wins by the adult and by the child from last year to this year, as shown in the table.

Team	Adult	Child
	Difference in Wins Between Years	Difference in Wins Between Years
Team A	-1	1
Team B	1	1
Team C	1	-2
Team D	-1	-2

Each team creates an ordered pair to show the total change in the number of wins from last year to this year.

- The x-coordinate of the ordered pair represents the change in the number of wins for the adult on the team.
- The y-coordinate of the ordered pair represents the change in the number of wins for the child on the team.

Each team's ordered pair ends up in one of the four quadrants. Write the name of each team under the quadrant that has that team's ordered pair.

Quadrant I	Quadrant II	Quadrant III	Quadrant IV

15. An electrician has 42.3 meters of wire to use on a job. On the first day, she uses 14.742 meters of the wire. How many meters of wire does she have remaining after the first day?

- A. 27.442
- B. 27.558
- C. 27.642
- D. 27.658



16. Each student in Anthony's grade writes a book report. Anthony surveys some of the students about the length, in pages, of their book reports. He makes the table to show his results.

**Book Report Survey Results**

Pages in Book Report	Number of Students
3	2
4	12
5	19
6	6
7	1

How many students did Anthony survey?

- A. 15  
B. 25  
C. 40  
D. 65
17. Jackson and Lamont each write down the date they were born. (For example, a person born on September 17 would write down "17.") They notice the following things about the two different numbers.
- Both dates have 24 as a multiple.
  - The larger date is **not** a multiple of the smaller date.
  - The greatest common factor of the two dates is 4.

What is the larger of the two dates?

18. Select the **three** equations.

A.  $2x + 1$

B.  $x = 7$

C.  $3x - 5$

D.  $\frac{7x}{15}$

E.  $10x = 2$

F.  $5 = 3 - 2x$

19. A soccer team gained 3 new players after 7 players left the team. Which expression describes the change in the number of players on the team?

A.  $(-7) + 3$

B.  $7 + 3$

C.  $-7 - 3$

D.  $7 + (-3)$

20. An expression is shown.

$$4 - 3x^2 + 5x$$

Select the **two** statements about the expression that are true.

A. The expression has six terms.

B. The 5 is an exponent in a term.

C. One of the terms is a constant.

D. The  $x$  is a variable in two terms.

E. The coefficient of one of the terms is 2.

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## Session 2

# Mathematics

### **Directions**

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1. Benny and Kiara each sell comic books.
- Benny sells 8 comic books for \$6.00.
  - Kiara sells 10 comic books for \$7.00.

Which statement correctly explains who sells comic books at a lower unit rate?

- A. Benny sells comic books at a lower unit rate because \$6.00 is less than \$7.00.
- B. Benny sells comic books at a lower unit rate because  $8 \div 6 = 1.33$  is less than  $10 \div 7 = 1.43$ .
- C. Kiara sells comic books at a lower rate because Benny's 8 comic books would sell for less than \$6.00 if he sold them at the same rate as Kiara.
- D. Kiara sells comic books at a lower rate because the difference between the price for which Kiara sells 10 comic books and the price for which Benny sells 8 comic books is less than \$2.00.
2. An expression is shown below.

$$4(6 + 3) + 4$$

Select the **two** expressions that are equivalent to the given expression.

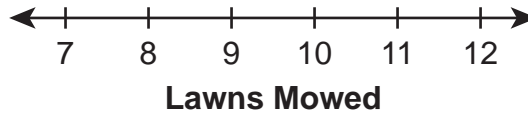
- A.  $4(6 + 3 + 1)$
- B.  $4(6 + 3 + 4)$
- C.  $12(2 + 1) + 4$
- D.  $12(2 + 3) + 4$
- E.  $24 + 3(2)$
- F.  $24 + 3 + 4$

3. Emily runs a lawn-mowing business. She records the number of lawns her business mows each day for 10 days. Her data are shown.

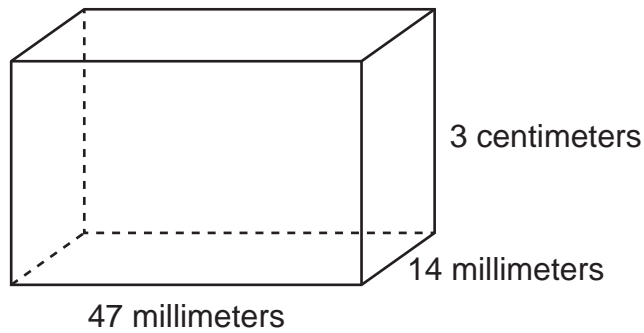
7, 12, 9, 9, 8, 9, 11, 11, 12, 9

Create a dot plot to represent Emily's data.

**Emily's Data**



4. A rectangular prism is shown.



What is the volume, in cubic **millimeters**, of the rectangular prism?

5. Dominic works at a supermarket. He weighs some cheese, in pounds, for a customer. Then, he removes some of the cheese from the scale and weighs the remaining cheese. The equation below represents this situation.

$$1.65 - x = 1.50$$

What is the value of  $x$ , and what does it most likely represent?

- A. The value of  $x$  is 0.15, and it represents the amount of cheese, in pounds, Dominic removes from the scale.
- B. The value of  $x$  is 0.15, and it represents the amount of cheese, in pounds, that the customer purchases from Dominic.
- C. The value of  $x$  is 3.15, and it represents the amount of cheese, in pounds, Dominic removes from the scale.
- D. The value of  $x$  is 3.15, and it represents the amount of cheese, in pounds, that the customer purchases from Dominic.
6. Ashley needs a piece of wire that is 12.5 feet long for a project. What is the length, in **meters**, of the piece of wire Ashley needs for her project?

(1 inch = 2.54 centimeters)



7. An expression is shown.

$$6(2 + 3)^2 - 1$$

What is the value of the expression?

- A. 20
- B. 59
- C. 149
- D. 899

8. There are 12 fifth-grade students and 18 sixth-grade students in a mixed-grade class. What is the ratio of fifth-grade students to **all** the students in the class?
- A. 2:3
  - B. 2:5
  - C. 3:2
  - D. 5:2

9. Jason buys 2 sandwiches for \$12. He uses the equation shown to find the cost,  $x$ , of each sandwich.

$$2x = 12$$

What is the cost of each sandwich?

- A. \$6
  - B. \$10
  - C. \$14
  - D. \$24
10. Carson's favorite band is playing 5 concerts. The ticket prices, in dollars, for each of the 5 concerts are listed below.

14, 14, 16, 20, 21

What is the mean absolute deviation of the ticket prices for the 5 concerts?

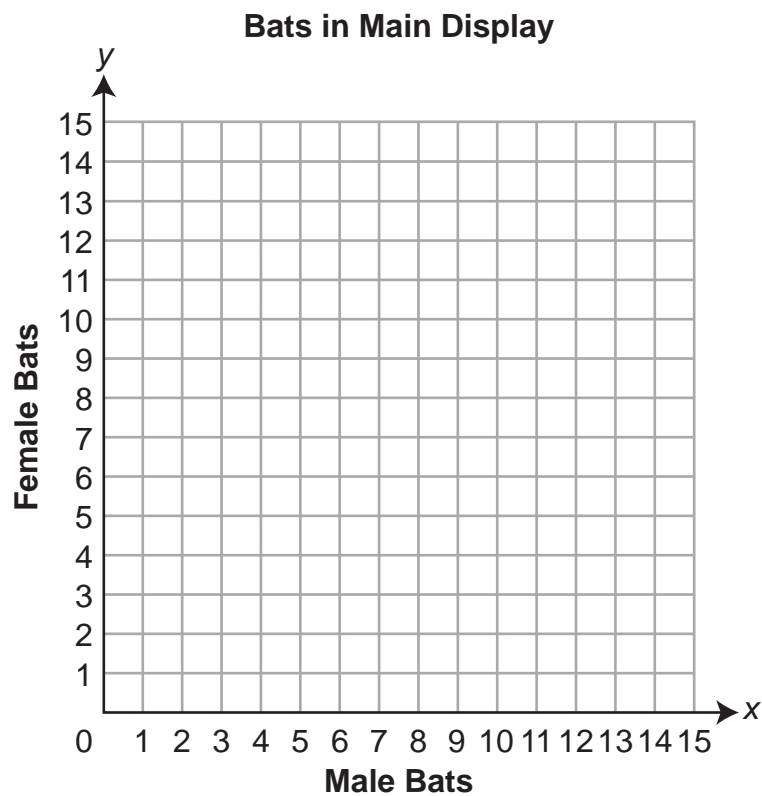


11. A zoo has male and female bats. The zoo always keeps the same ratio of male to female bats in their main display. The table shows the numbers of male and female bats in the zoo's main display at various times.

**Bats in Main Display**

Males	Females
3	4
6	8
9	12

Plot the three pairs of values from the table on the coordinate grid.



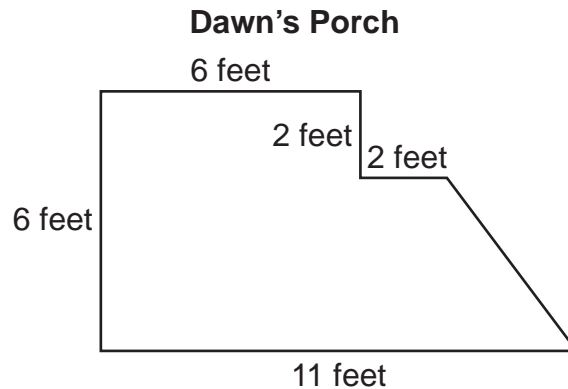
12. The table shows the relationship between two variables,  $x$  and  $y$ . The same rule is used to create each row in the table.

$x$	$y$
1	3
2	11
3	19
4	27

Which statement about the table is true?

- A. As the  $x$ -values increase, the difference between consecutive  $y$ -values increases.
- B. As the  $x$ -values increase, the difference between consecutive  $y$ -values decreases.
- C. As the  $x$ -values increase, the difference between the  $y$ -value and  $x$ -value in each row increases.
- D. As the  $x$ -values increase, the difference between the  $y$ -value and  $x$ -value in each row decreases.

13. The dimensions of Dawn's porch are shown.



What is the area, in square feet, of Dawn's porch?

- A. 32
- B. 42
- C. 46
- D. 50

14. Danny cuts blocks of wood from a log. Each block of wood is a square prism. Danny writes the expression  $2x^2 + 4xy$  to represent the surface area of each block of wood. In Danny's expression,
- $x$  represents the length, in inches, of the base of the block of wood, and
  - $y$  represents the height, in inches, of the block of wood.

Match each length and height pair with the corresponding surface area for a block of wood with those measurements. Draw a line to make a match.

length: 1.5 inches;  
height: 5.75 inches

28.875 square inches

length: 1.75 inches;  
height: 3.75 inches

32.375 square inches

length: 2.75 inches;  
height: 1.25 inches

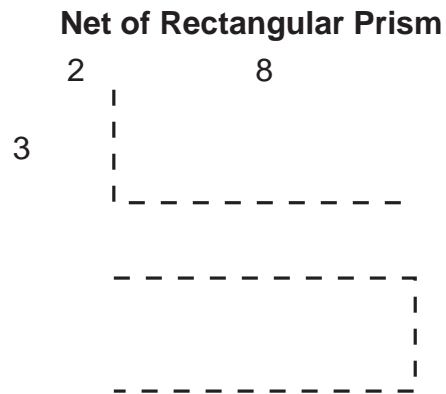
39 square inches

15. Of the 40 students in Ms. Carr's class, 87.5% live less than 10 miles from school. How many of the students in Ms. Carr's class live less than 10 miles from school?

16. Laura uses the inequality  $\frac{1}{2}x - 7 > 10$  to determine the number of pillows,  $x$ , she needs to sell at the craft fair to make a profit. What is the **least** number of pillows Laura needs to sell to earn a profit?

- A. 33
- B. 34
- C. 35
- D. 36

17. The net of a rectangular prism is shown.

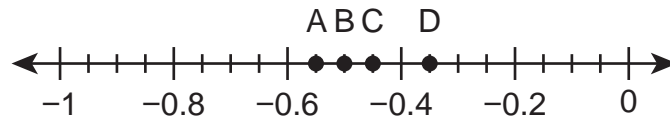


What is the surface area, in square units, of the rectangular prism?

- A. 44
  - B. 48
  - C. 60
  - D. 92
18. A hardware store sold  $h$  hammers in February. The hardware store sold 5 less than 2 times as many hammers in June as it did in February. Write an expression the hardware store could use to represent the number of hammers it sold in June.

19. The ratio of people to books in a classroom is 10:4. What is the unit rate of people per book?
- A. 0.4
  - B. 0.6
  - C. 2.5
  - D. 5.2

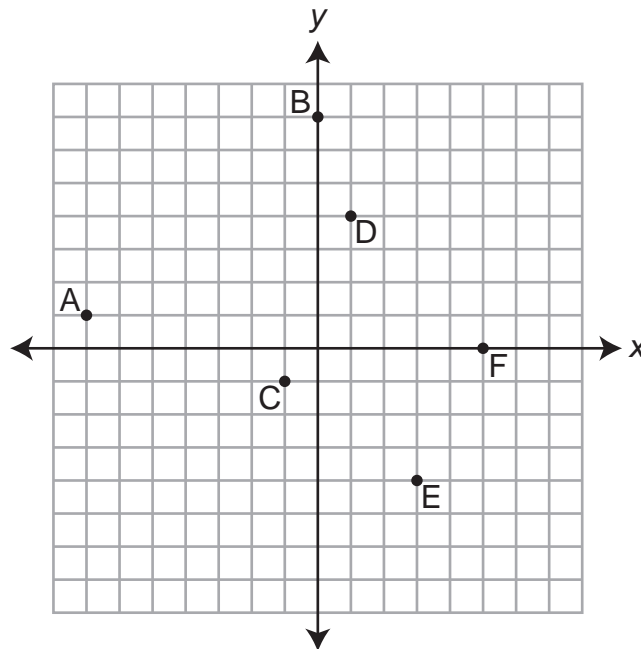
20. Points A, B, C, and D are plotted on the number line.



Which point is plotted at  $-0.45$ ?

- A. A
- B. B
- C. C
- D. D

21. Points A through F are shown on the coordinate plane.



Select the **two** points that have a negative  $y$ -coordinate.

- A. point A
- B. point B
- C. point C
- D. point D
- E. point E
- F. point F

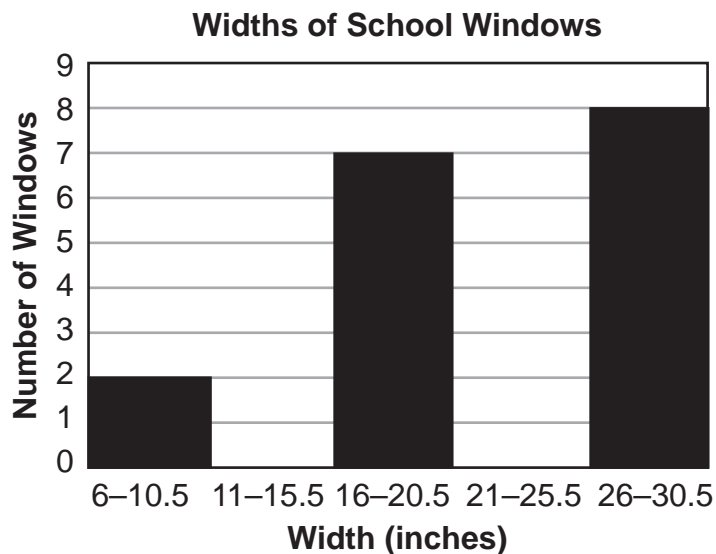
22. Each of the pairs of values in the table has the same ratio.

$x$	6	14	$k$	28
$y$	9	$m$	30	42

What are the values of  $k$  and  $m$ ?

- A.  $k = 16$  and  $m = 28$
  - B.  $k = 20$  and  $m = 21$
  - C.  $k = 22$  and  $m = 18$
  - D.  $k = 27$  and  $m = 17$
23. Clark measured the widths, rounded to the nearest half inch, of 21 different windows in his school. He is creating a histogram to display his results. He knows the following pieces of information:
- There is at least 1 window in each interval.
  - The median width is 22 inches.

Complete Clark's histogram by adding the missing data.



24. What is the solution set for the inequality  $54 < 18x$ ?

- A.  $x > 3$
- B.  $x < 3$
- C.  $x > 36$
- D.  $x < 36$

25. Each of the pairs of values in the table has the same ratio.

<b>x</b>	14	21	28
<b>y</b>	4		8

What is the missing value in the table?

26. Which expression has the greatest value?

- A.  $|-10|$
- B.  $|-3|$
- C.  $|6|$
- D.  $|9|$

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## Session 3

# Mathematics

### **Directions**

Now you will be taking Session 3 of the Mathematics Summative Assessment. This session includes a Performance Event that contains a set of questions based on a common task or scenario. Some questions will have answer choices that begin with letters. Circle the letter of each correct answer. Other questions will ask you to circle, write or show your answers. Read each question carefully and follow the directions. Mark all your answers in your test booklet. Calculators are allowed in this session.

## Grade 6 Mathematics - Session 3

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John's family is planning a road trip to Florida.

John is using the following information to help plan the trip:

- total distance (one way): 1,023 miles
- average driving speed: 60 miles per hour
- driving time on first day: 10 hours

1. Based on John's information, how many miles will his family travel on the first day?

2. Complete the table of John's estimates of time driving and distance traveled.

<b>Time Driving (hours)</b>			3	7
<b>Distance Traveled (miles)</b>	60	150		

3. Based on John's information, how many hours will it take the family to travel the total distance to Florida?

- A. 17.03
- B. 17.3
- C. 17.05
- D. 17.5

4. Write an equation John can use to represent the relationship between distance traveled, in miles,  $d$ , and driving time, in hours,  $t$ .

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