























# **ATTENTION!**

**Do NOT go on  
until you are  
told to do so.**



**DO NOT  
MARK  
ON THIS  
PAGE.**

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

# **Session 2**

# **Mathematics**

## **Directions**

Now you will be taking Session 2 of the Mathematics Practice Form. This session includes different types of questions. 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.

**Go On ►**

**DO NOT  
MARK  
ON THIS  
PAGE.**

**1** Whenever Hannah turns on her cell phone, it randomly shows a background image from a group of 6 images Hannah has selected. Of the 6 images Hannah has selected,

- exactly 2 are of her friends,
- exactly 3 are of her family members, and
- exactly 1 is of her pet dog.

What is the probability that the cell phone shows an image other than the pet dog the next time Hannah turns on her cell phone?

**2** A triangle has sides that are 4 units, 6 units, and  $m$  units long. Select the **two** numbers that are possible values of  $m$ .

- A.** 1
- B.** 2
- C.** 5
- D.** 8
- E.** 12

**3** A store is offering a 30% discount on shirts. A shirt at the store has an original cost of \$25. What is the cost of the shirt, in dollars, after the discount?

**Go On ►**

**4**

A library keeps track of the number of overdue items at the end of each month.

- At the end of April, there were  $x$  overdue items.
- At the end of May, the number of overdue items was 3% less than the number of overdue items at the end of April.

The expression  $x - 0.03x$  represents the number of overdue items at the end of May. Which sentence **best** explains how to simplify the expression that represents the number of overdue items at the end of May?

- A.** Combine  $x$  and  $0.03x$ , since they are like terms, by canceling out the  $x$ .
- B.** Combine  $x$  and  $0.03x$ , since they are like terms, by subtracting  $1 - 0.03$  to find the new coefficient.
- C.** Factor out an  $x$ , since it appears in both terms, leaving 1 in the first term and  $0.03x$  in the second term.
- D.** Factor out an  $x$ , since it appears in both terms, eliminating the first term and leaving 0.03 in the second term.

**5**

There are 50 tickets in a jar. Each ticket is either red or blue. Jeanette randomly draws 10 tickets from the jar, counts the number of red tickets, and then replaces the tickets. She does this 8 times. The list shows how many red tickets Jeanette drew on each attempt.

3 4 6 7 3 4 2 3

What is the **best** estimate for the total number of red tickets in the jar?

- A.** 4
- B.** 20
- C.** 25
- D.** 32



- 6** Jamar is buying bottles of juice for his class party. A pack of 12 bottles of juice costs \$3.96. Which expression could Jamar use to determine the cost of 1 bottle of juice?
- A.**  $3.96 \div 12$
  - B.**  $3.96 \cdot 12$
  - C.**  $12 \div 3.96$
  - D.**  $12 - 3.96$

- 7** Carter writes the expression  $0.25x + 1.75y + 0.25y + 1.5xy$ . He wants to rewrite the expression by combining like terms. For each pair of terms in the table, mark whether they are like terms or not like terms.

	Like Terms	Not Like Terms
0.25x and 1.75y		
0.25x and 0.25y		
0.25x and 1.5xy		
1.75y and 0.25y		
1.75y and 1.5xy		
0.25y and 1.5xy		

**8**

Gary has a box of pencils. In the box,  $\frac{7}{21}$  of the pencils have been sharpened. Select the **three** fractions that are proportional to the fraction of sharpened pencils in Gary's box.

A.  $\frac{1}{3}$

B.  $\frac{1}{7}$

C.  $\frac{12}{4}$

D.  $\frac{13}{39}$

E.  $\frac{14}{42}$

F.  $\frac{21}{7}$

**9**

A club is selling cookies to earn money. The club is going to donate  $\frac{1}{4}$  of the money to charity and keep the rest. The total cookie sales are \$367.20. Which expression could be used to determine the amount of money the club will keep?

A.  $367.20 - 0.14(367.20)$

B.  $367.20 - 0.25(367.20)$

C.  $367.20 - 0.4(367.20)$

D.  $367.20 - 2.5(367.20)$

**10**

Arie has a bag that contains 15 yellow marbles, 13 blue marbles, and 22 red marbles. Select the **two** statements that are true when Arie randomly draws 10 marbles from the bag.

- A. She is likely to draw all red marbles.
- B. She is likely to draw more blue marbles than red marbles.
- C. She is likely to draw more red marbles than yellow marbles.
- D. She is likely to draw about the same number of yellow and blue marbles.
- E. She is likely to draw more red marbles than yellow and blue marbles combined.

**11**

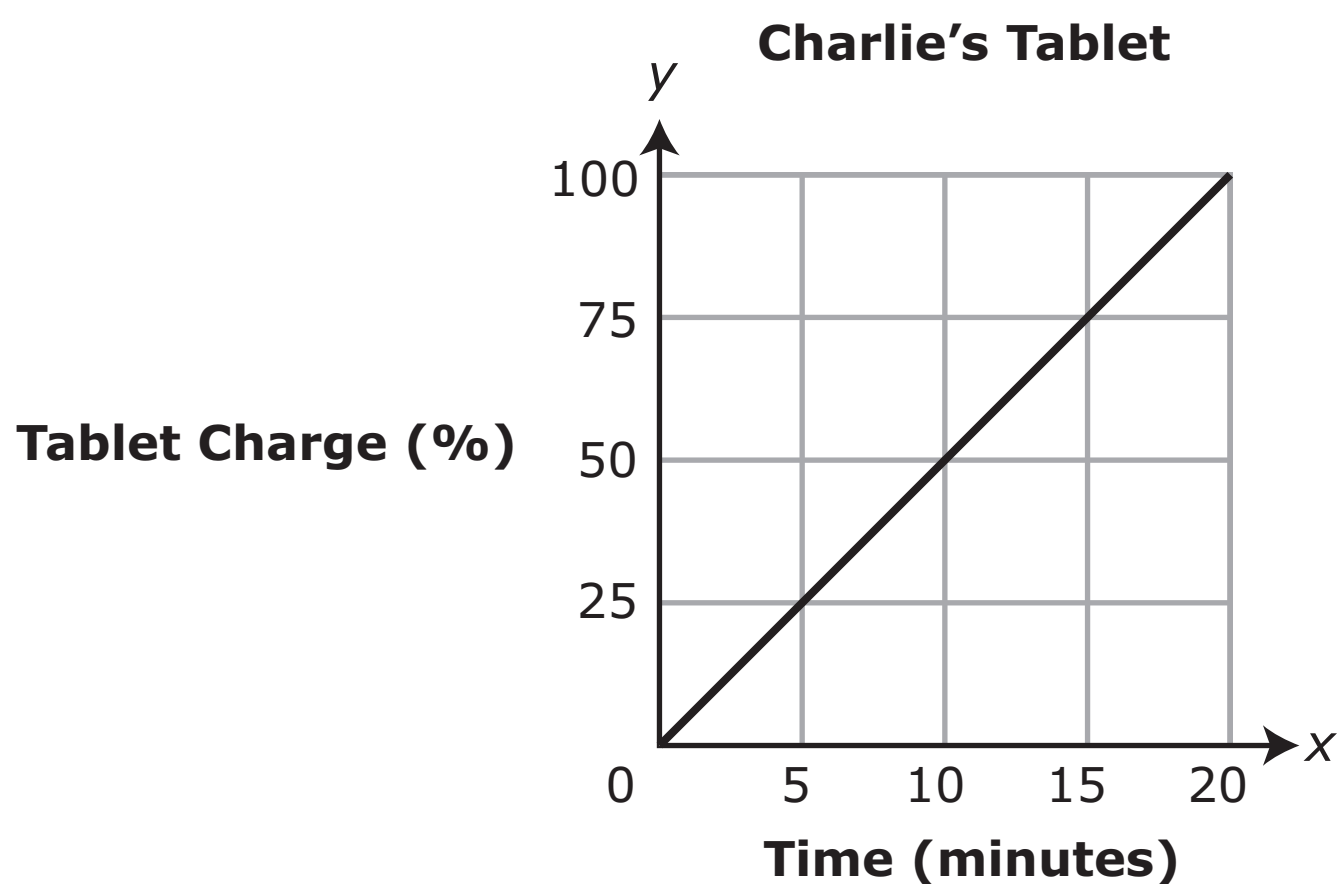
Li put \$75 into his savings account. The money was  $\frac{1}{3}$  of his paycheck. Which equation could be used to find the amount of money,  $p$ , in dollars, on his paycheck?

- A.  $75p = \frac{1}{3}$
- B.  $3p = 75$
- C.  $75p = 3$
- D.  $\frac{1}{3}p = 75$

**Go On ►**

**12**

Charlie is charging his tablet. The graph shows how long it takes for his tablet to charge.



Which statement about the ordered pair (5, 25) is true?

- A.** It takes 5 minutes to charge 25 tablets.
- B.** It takes 25 minutes to charge 5 tablets.
- C.** It takes 5 minutes to charge 1 tablet to 25%.
- D.** It takes 25 minutes to charge 1 tablet to 5%.

**13**

An inequality is shown.

$$-2x + 12 < 18$$

What is the solution to the inequality?

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

**14**

Emanuel is planting trees along a new city sidewalk. He plants the same number of trees on each city block. After 3 blocks, he has planted 15 trees. After 5 blocks, he has planted 25 trees. At what rate is Emanuel planting trees?

- A.  $\frac{1}{5}$  trees per block
- B.  $\frac{3}{5}$  trees per block
- C. 3 trees per block
- D. 5 trees per block

**15**

A sprinkler waters a circular region in Jason's yard that has a radius of 15 feet. Rounded to the nearest square foot, what is the area of the circular region that is watered by the sprinkler?

- A. 94
- B. 148
- C. 707
- D. 2,827

**Go On ►**

- 16** A proportional relationship is shown.

$x$	$y$
0	0
2	0.9
4	1.8
6	2.7
8	3.6

What is the constant of proportionality?

- 17** Jorge wants to buy his father a gift that costs \$32. He has already saved \$18 for the gift. Jorge saves the same amount of money each week for the next 4 weeks. How much money, in dollars, will Jorge have to save each week to have exactly enough money to buy his father the gift?

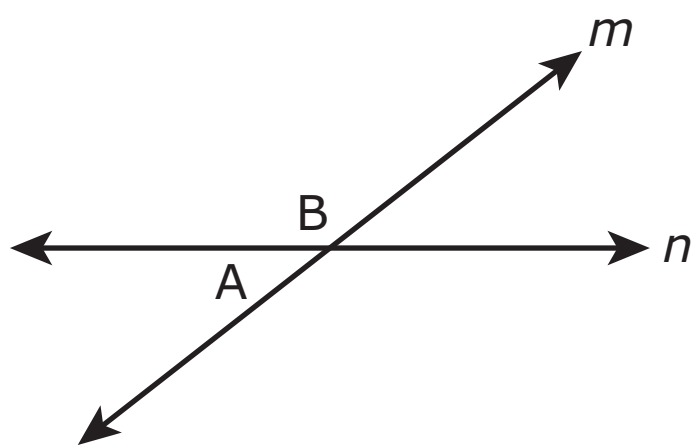
**18**

Lily tosses a fair coin in the air 20 times and records the results. The coin lands with the tails side up in 12 of the 20 trials. Which statement about Lily's trials is correct?

- A.** The theoretical probability is 50%, because at least 50% of Lily's coin tosses landed with the tails side up.
- B.** The theoretical probability of landing with the tails side up is  $\frac{12}{20} = 60\%$ , because that is what Lily observed.
- C.** The experimental probability is 50%, because at least 50% of Lily's coin tosses landed with the tails side up.
- D.** The experimental probability of landing with the tails side up is  $\frac{12}{20} = 60\%$ , because that is what Lily observed.

**19**

Lines  $m$  and  $n$  are shown.



Angle A measures  $38^\circ$ . What is the measure, in degrees, of angle B?

**Go On ▶**

**20** An expression is shown.

$$-3(x - 4)$$

Which expression is equivalent to the given expression?

- A.**  $-3x + 4$
- B.**  $-3x - 4$
- C.**  $-3x + 12$
- D.**  $-3x - 12$

**21** Julia uses a scale to weigh three identical stacks of coins.

- The scale has a maximum percent error of 3%.
- The scale says the weight of the first stack of coins is 10.0 ounces.
- The scale says the weight of the second stack of coins is 10.3 ounces.

Rounded to the nearest tenth of an ounce, what is the greatest possible amount that the scale could say for the weight of the third stack of coins?

- A.** 9.7 ounces
- B.** 10.0 ounces
- C.** 10.3 ounces
- D.** 10.6 ounces



**22**

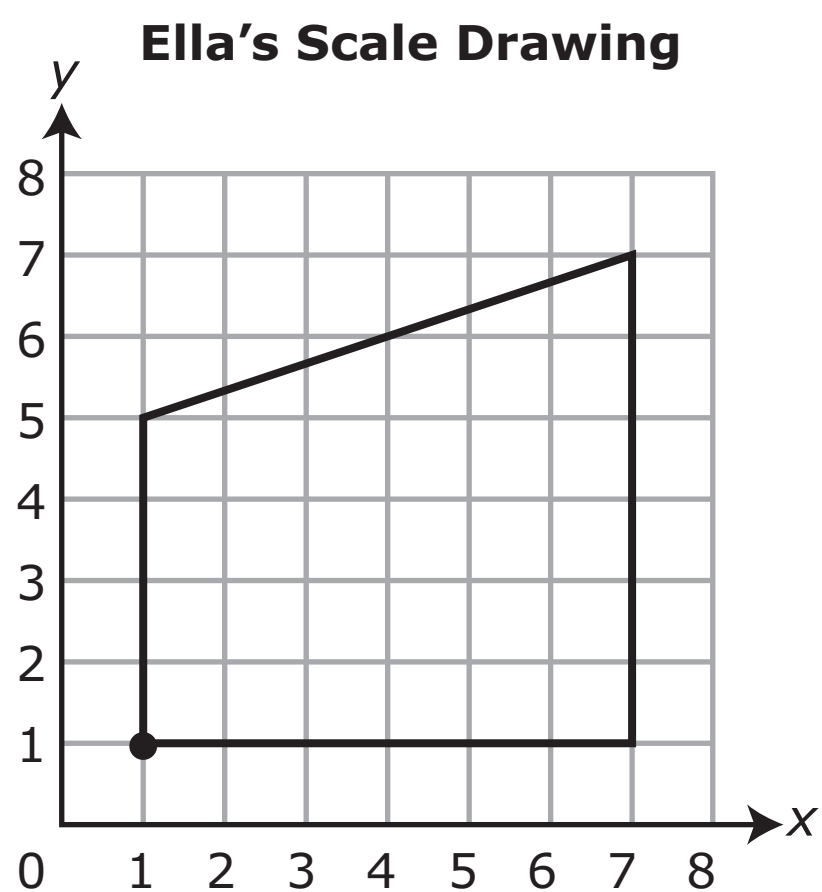
Class X and class Y each have 20 students. They each keep track of the number of books each student reads in one month. The mean number of books read by the students in class X is 4.2 books. The mean number of books read by the students in class Y is 3.8 books. Select the **two** statements that are true.

- A.** Every student in class X read more books than any student in class Y.
- B.** The students in class X like reading more than the students in class Y.
- C.** The students in class X read longer books than the students in class Y.
- D.** On average, the students in class X read more books than the students in class Y.
- E.** The total number of books read by class X is more than the total number of books read by class Y.

**Go On ►**

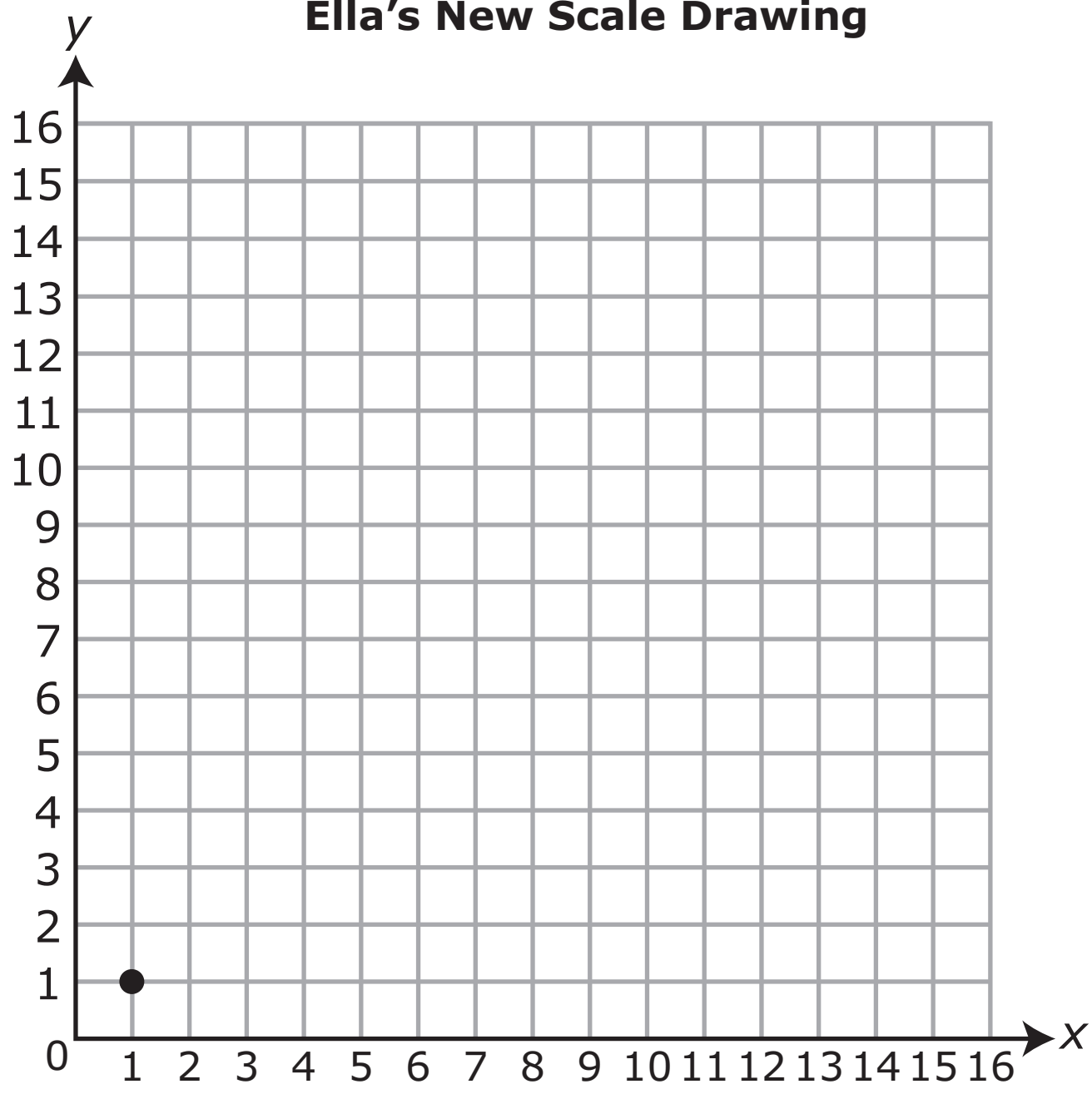
**23**

Ella designs a glass tabletop for a restaurant. She makes the scale drawing shown.



In Ella's scale drawing, the length of each square on the grid represents 12 inches. Make a new scale drawing of Ella's tabletop in which the length of each square on the grid represents 6 inches. The plotted point in Ella's new scale drawing should correspond to the plotted point in Ella's original scale drawing.

### Ella's New Scale Drawing



**Go On ▶**

**24**

Chad is putting a frame around a picture. He needs to decide whether he wants the frame to be black or brown. He also needs to decide whether he wants the frame to be made of metal or of wood. Finally, he needs to decide whether he wants the picture covered with glass or with plastic. He makes a list of his options as shown.

{black, metal, glass}  
{black, metal, plastic}  
{black, wood, glass}  
{black, wood, plastic}  
{brown, metal, plastic}  
{brown, wood, glass}  
{brown, wood, plastic}

Which option did Chad forget to include in his list?

- A. {brown, metal}
- B. {brown, wood, plastic}
- C. {brown, metal, black}
- D. {brown, metal, glass}

**25**

What is the solution to the equation  $2(x + 2.4) = 6.4$ ?

- A. 0.8
- B. 2
- C. 4
- D. 10.4

**26**

Sophia earned \$18 for working  $2\frac{1}{4}$  hours. How much did she earn per hour?

- A. \$8.00
- B. \$9.00
- C. \$9.25
- D. \$12.50

**27**

In a mine, 0.6% of all the mined material is copper. The company that runs the mine needs the mine to produce more than 0.81 million tons of copper to make a profit this year. The mine has already produced 0.75 million tons of copper this year. The inequality below represents  $x$ , the additional millions of tons of material that need to be mined this year for the mine to make a profit.

$$0.75 + 0.006x > 0.81$$

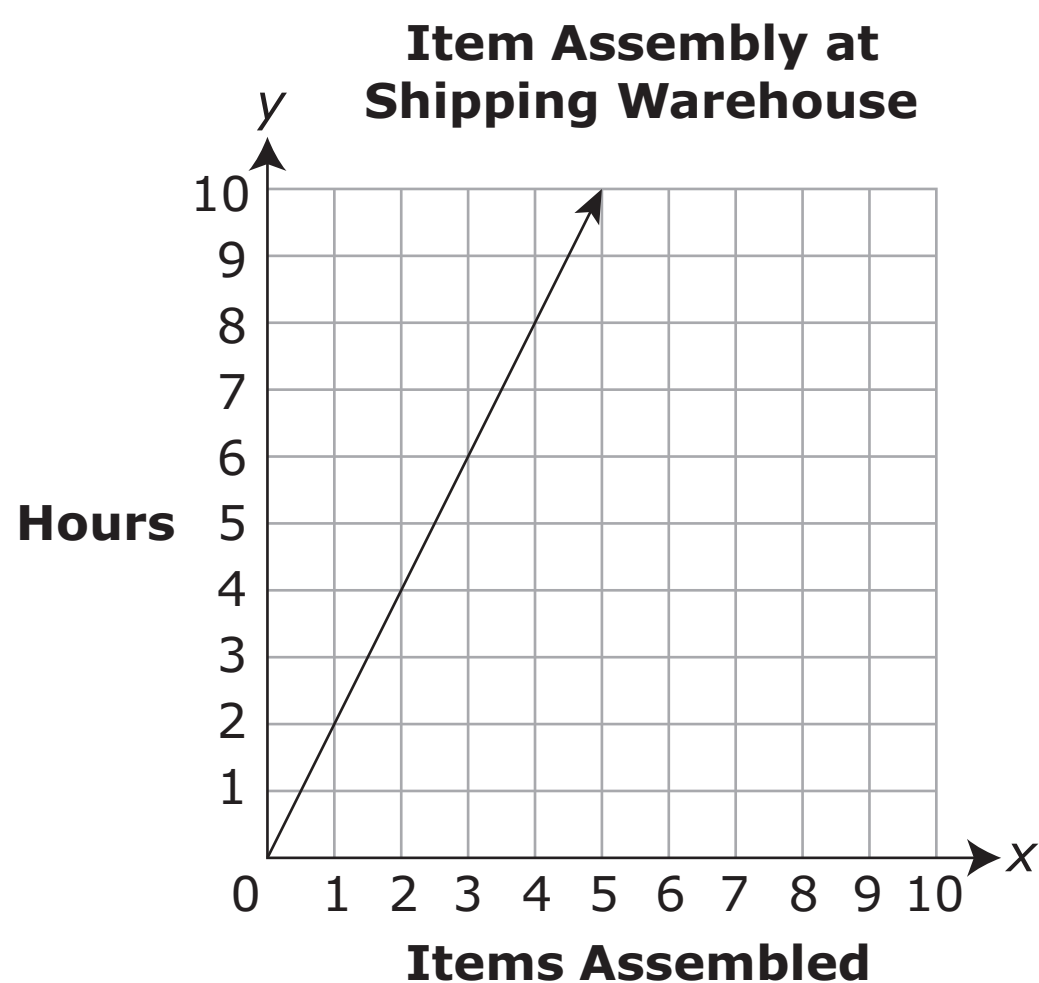
Which inequality shows all the possible values of  $x$ ?

- A.  $x > 1$
- B.  $x > 10$
- C.  $x > 26$
- D.  $x > 260$

**Go On ►**

**28**

The graph shows the number of hours it takes to assemble several items at a shipping warehouse.



What does the point (3, 6) represent?

- A.** It takes 3 hours to assemble 1 item at the shipping warehouse.
- B.** It takes 3 hours to assemble 6 items at the shipping warehouse.
- C.** It takes 6 hours to assemble 1 item at the shipping warehouse.
- D.** It takes 6 hours to assemble 3 items at the shipping warehouse.

























# **ATTENTION!**

**Do NOT go on  
until you are  
told to do so.**



Data Recognition Corporation  
13490 Bass Lake Road  
Maple Grove, MN 55311  
800.826.2368 | [www.datarecognitioncorp.com](http://www.datarecognitioncorp.com)

