

Student Name \_\_\_\_\_

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**Grade 8  
Mathematics  
Test Booklet**

*Practice Test*

TEST BOOKLET SECURITY BARCODE

# Unit 1

## (Non-Calculator)

**Directions:**

Today, you will take Unit 1 of the Grade 8 Mathematics Practice Test. You will not be able to use a calculator.

Read each question. Then, follow the directions to answer each question. Mark your answers by completely filling in the circles in your answer document. Do not make any pencil marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely. If a question asks you to show or explain your work, you must do so to receive full credit. Only responses written within the provided space will be scored.

If you do not know the answer to a question, you may go on to the next question. If you finish early, you may review your answers and any questions you did not answer in this unit ONLY. Do not go past the stop sign.

### Directions for Completing the Answer Grids

1. Work the problem and find an answer.
2. Write your answer in the boxes at the top of the grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each box, fill in the circle that matches the number or symbol you wrote above. Make a solid mark that completely fills the circle.
5. Do not fill in a circle under an unused box.
6. Fractions cannot be entered into an answer grid and will not be scored. Enter fractions as decimals.
7. See below for examples on how to correctly complete an answer grid.

### EXAMPLES

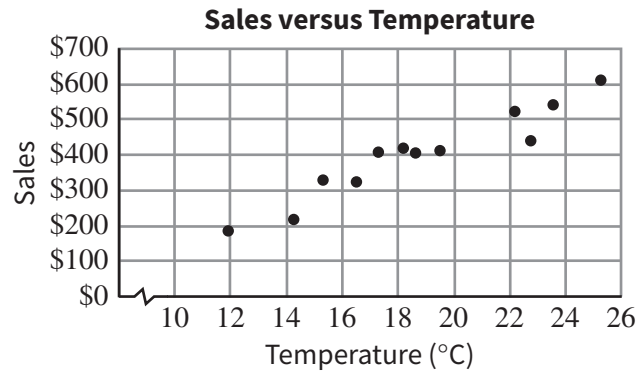
To answer  $-3$  in a question, fill in the answer grid as shown below.

-	3					
●						
○	○	○	○	○	○	○
○	0	0	0	0	0	0
○	1	1	1	1	1	1
○	2	2	2	2	2	2
●	3	3	3	3	3	3
○	4	4	4	4	4	4
○	5	5	5	5	5	5
○	6	6	6	6	6	6
○	7	7	7	7	7	7
○	8	8	8	8	8	8
○	9	9	9	9	9	9

To answer  $.75$  in a question, fill in the answer grid as shown below.

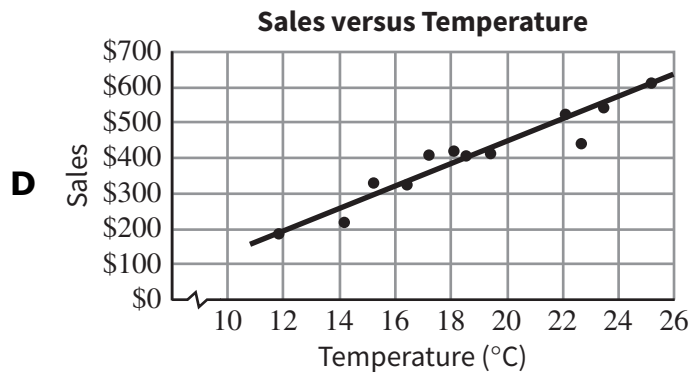
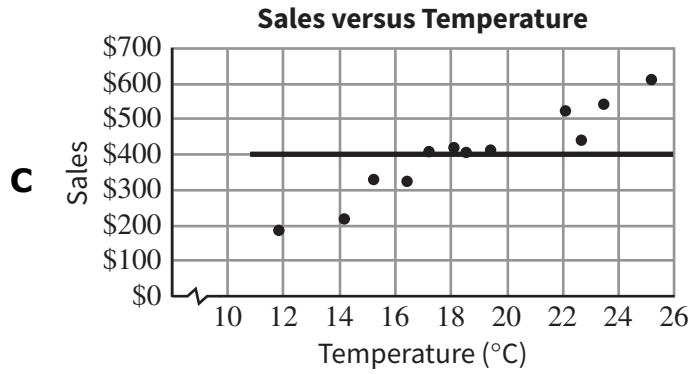
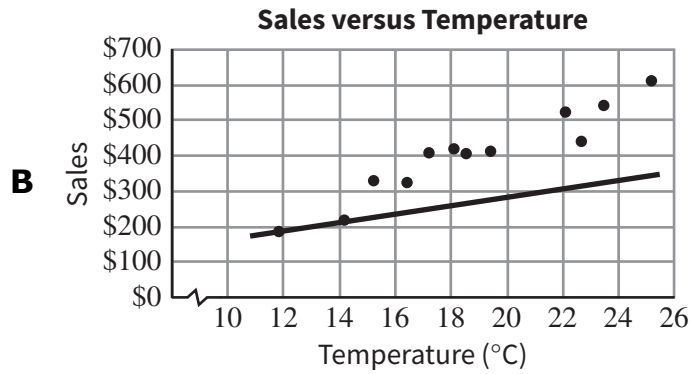
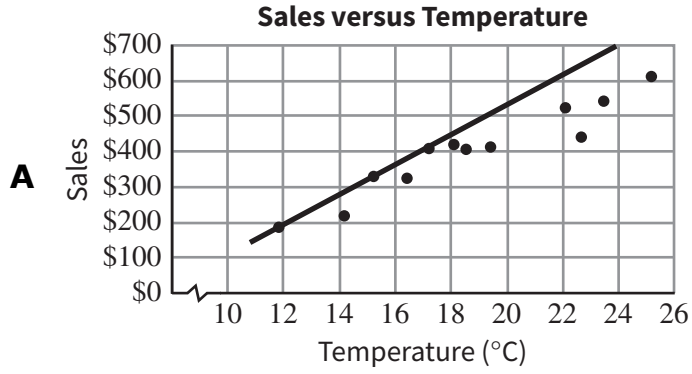
.	7	5				
○						
○	○	○	○	○	○	○
○	0	0	0	0	0	0
○	1	1	1	1	1	1
○	2	2	2	2	2	2
○	3	3	3	3	3	3
○	4	4	4	4	4	4
○	5	5	●	5	5	5
○	6	6	6	6	6	6
○	7	7	○	7	7	7
○	8	8	8	8	8	8
○	9	9	9	9	9	9

- 1 The following scatter plot shows the dollar amount of sales at an ice cream shop for 12 days and the average daily temperature for each of the days.



Which graph shows the scatter plot with the linear model that **best** predicts sales for a given temperature?

Select one answer.



2 Which of the following numbers are rational?

Select **all** that apply.

A  $-72$

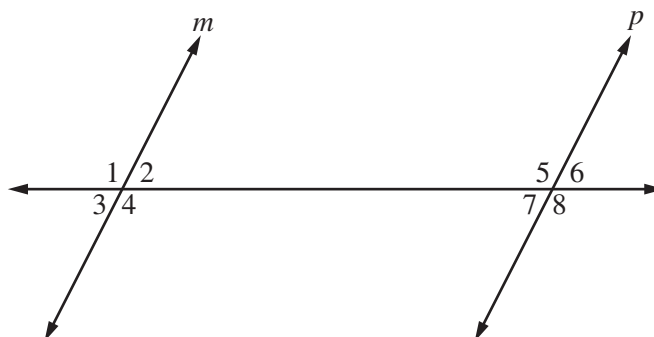
B  $\frac{4}{5}$

C  $\sqrt{6}$

D  $\sqrt{\frac{5}{16}}$

E  $\sqrt{100}$

- 3 The following figure shows three lines. Lines  $m$  and  $p$  are parallel. Angle 1 is labeled. Some of the other seven angles that are labeled in the figure are congruent to angle 1.



Which angles are congruent to angle 1?

Select **all** that apply.

- A 2
- B 3
- C 4
- D 5
- E 6
- F 7
- G 8

- 4 Consider the equation  $2x + 3 = mx + b$ .

For which values of  $m$  and  $b$  will the equation have **no** solutions?

Select one answer.

- A  $m = 2$  and  $b = 2$
- B  $m = 3$  and  $b = 3$
- C  $m = 2$  and  $b = 3$
- D  $m = 3$  and  $b = 2$





**You have come to the end of Unit 1 of the test. Review your answers from Unit 1 only.**







**GO ON TO NEXT PAGE**



# Unit 2

## (Calculator)

**Directions:**

Today, you will take Unit 2 of the Grade 8 Mathematics Practice Test. You will be able to use a calculator.

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○	4	4	4	4	4	4
○	5	5	5	5	5	5
○	6	6	6	6	6	6
○	7	7	7	7	7	7
○	8	8	8	8	8	8
○	9	9	9	9	9	9

To answer  $.75$  in a question, fill in the answer grid as shown below.

.	7	5				
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○	2	2	2	2	2	2
○	3	3	3	3	3	3
○	4	4	4	4	4	4
○	5	○	○	○	○	○
○	6	6	6	6	6	6
○	7	○	○	○	○	○
○	8	8	8	8	8	8
○	9	9	9	9	9	9

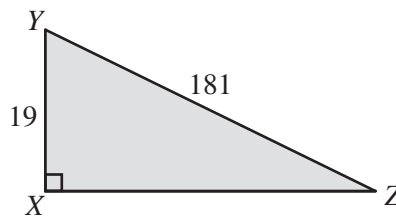


- 1 Anton has some money saved for school. To increase the amount he has saved, he got a job and added all the money earned to the amount already saved.
- Anton was paid a constant rate in dollars per hour at his job.
  - After working 10 hours, the amount he had saved was \$450.
  - After working 20 hours, the amount he had saved was \$600.
  - Anton did not save any other money or spend any of the money he had saved.

Which equation represents  $y$ , the amount of money in dollars Anton would have saved after working  $x$  hours?

Select one answer.

- A**  $y = 10x + 150$
  - B**  $y = 15x + 100$
  - C**  $y = 15x + 300$
  - D**  $y = 30x + 150$
- 2 The following figure shows triangle  $XYZ$ . The length of  $\overline{XY}$  is 19 units, and the length of  $\overline{YZ}$  is 181 units.



Note: Figure not drawn to scale.

What is the length of  $\overline{XZ}$ , in units?

Enter your answer in the space provided.



3 Consider the following system of two equations.

$$\begin{cases} 3x - 4y = -24 \\ 3x + 2y = -6 \end{cases}$$

What is the value of the expression  $3x + 4y$ ?

Enter your answer in the space provided.

4 Certain values of linear function J are shown in the following table, where  $x$  is the input variable and  $y$  is the output variable.

$x$	$y$
0	2
1	7
2	12

Linear function K is represented by the equation  $y = 3x + 8$ .

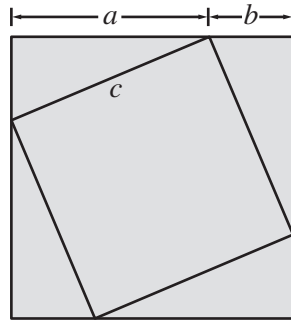
Which statements about function J and function K are true?

Select **all** that apply.

- A The graph of function J has a greater slope.
- B The graph of function K has a greater slope.
- C The graph of function J has a greater  $y$ -intercept.
- D The graph of function K has a greater  $y$ -intercept.
- E The graph of function K and the graph of function J have equal slopes.
- F The graph of function K and the graph of function J have equal  $y$ -intercepts.



- 5 The following figure shows 1 large square that is separated into 4 congruent right triangles and 1 small square.



The figure can be used to develop the equation  $(a + b)^2 = 4 \cdot \frac{1}{2} \cdot ab + c^2$ , which can be used to prove the Pythagorean theorem.

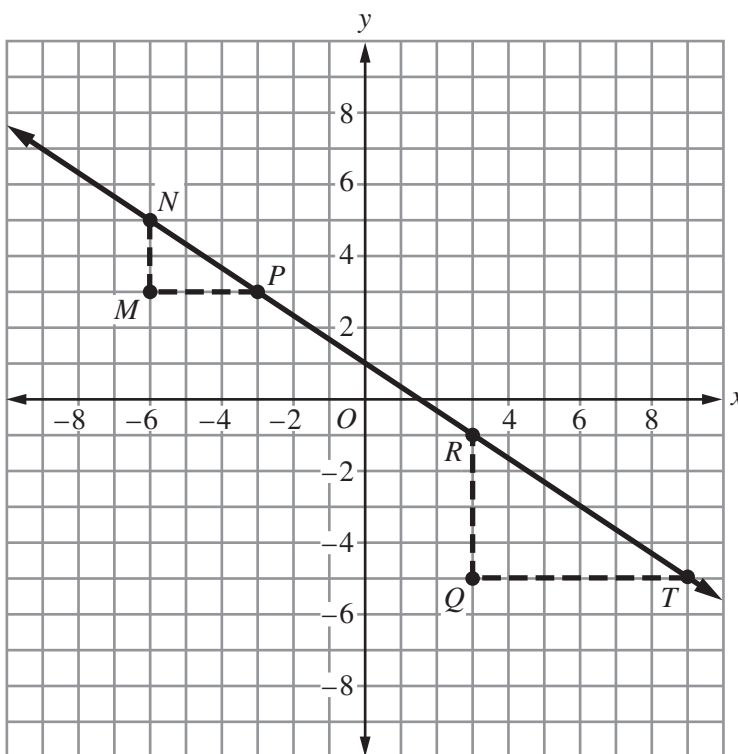
How is the equation developed from the figure?

Select one answer.

- A The area of the small square is equal to the sum of the areas of two of the right triangles and the large square.
- B The area of the small square is equal to the sum of the areas of the four right triangles and the large square.
- C The area of the large square is equal to the sum of the areas of two of the right triangles and the small square.
- D The area of the large square is equal to the sum of the areas of the four right triangles and the small square.



- 6 On the following coordinate grid, points  $N$ ,  $P$ ,  $R$ , and  $T$  are collinear. The coordinates of each point are integers. The dashed lines shown on the coordinate grid form triangles  $MNP$  and  $QRT$ .



**Part A**

Linda claimed that the slope of  $\overline{PR}$  is  $\frac{6}{4}$  because point  $P$  is 6 units to the left of point  $R$  and 4 units up from point  $R$ .

Explain the error in Linda's claim and calculate the correct slope of  $\overline{PR}$ . Show all of your work.

Enter your work and explanation in the space provided.

**Part B**

Use triangles  $MNP$  and  $QRT$  to show that the slope of the line is the same from point  $N$  to point  $P$  and from point  $R$  to point  $T$ .

Enter your work or explanation in the space provided.





**You have come to the end of Unit 2 of the test. Review your answers from Unit 2 only.**











# 8-MATH