Name:_____

PPN Testing Program

2019 – 2020

Bi-Weekly Quiz 3

Grade 8

Grade 8 Mathematics Reference Sheet

CONVERSIONS

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 5,280 feet
1 mile = 1,760 yards
1 mile = 1.609 kilometers

1 kilometer = 0.62 mile
1 pound = 16 ounces
1 pound = 0.454 kilogram
1 kilogram = 2.2 pounds
1 ton = 2,000 pounds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon = 3.785 liters
1 liter = 0.264 gallon
1 liter = 1,000 cubic centimeters

FORMULAS

Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$
Circle	$C = \pi d$ or $C = 2\pi r$
General Prisms	$V = Bh$
Cylinder	$V = \pi r^2 h$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \frac{1}{3}\pi r^2 h$
Pythagorean Theorem	$a^2 + b^2 = c^2$

TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before making your choice.

- You have been provided with mathematics tools (a ruler, a protractor, and a calculator) and a reference sheet to use during the test. It is up to you to decide when each tool and the reference sheet will be helpful. You should use mathematics tools and the reference sheet whenever you think they will help you to answer the question.

1

A.

x	y
-8	-15
-6	-13
1	2
1	9

C.

x	y
-2	4
8	8
-2	-2
11	1

B.

x	y
3	8
9	1
14	5
3	6

D.

x	y
-5	7
-1	3
2	-5
6	7

2

In each table, x represents the input value and y represents the output value. Which table does **not** represent a function of x ?

A

x	y
0	0
1	1
2	2
3	3

C

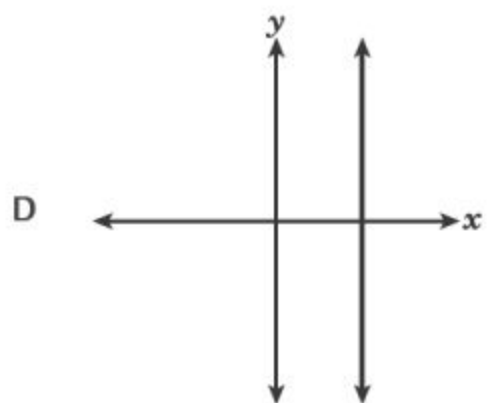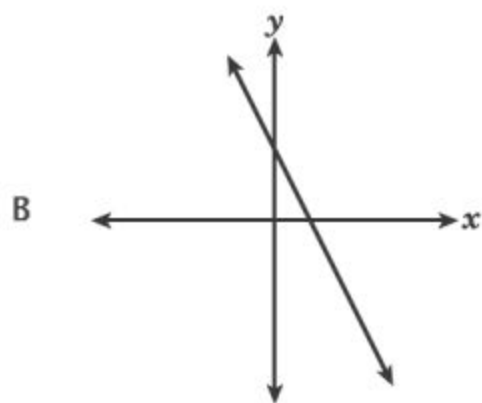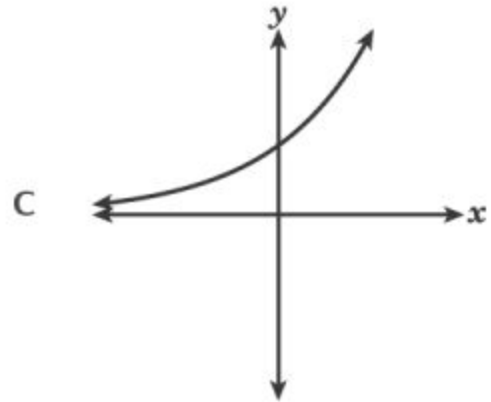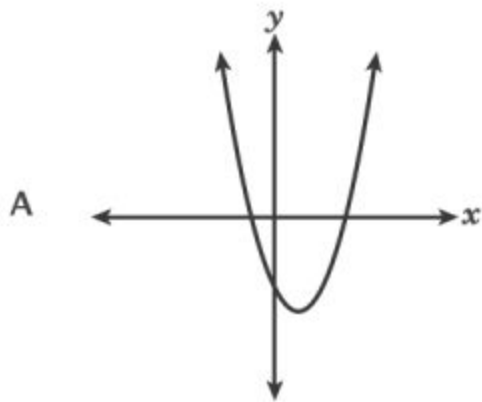| x	y
0	3
1	3
2	3
3	3

B

x	y
3	0
2	1
1	2
0	3

D

x	y
3	0
3	1
3	2
3	3

3

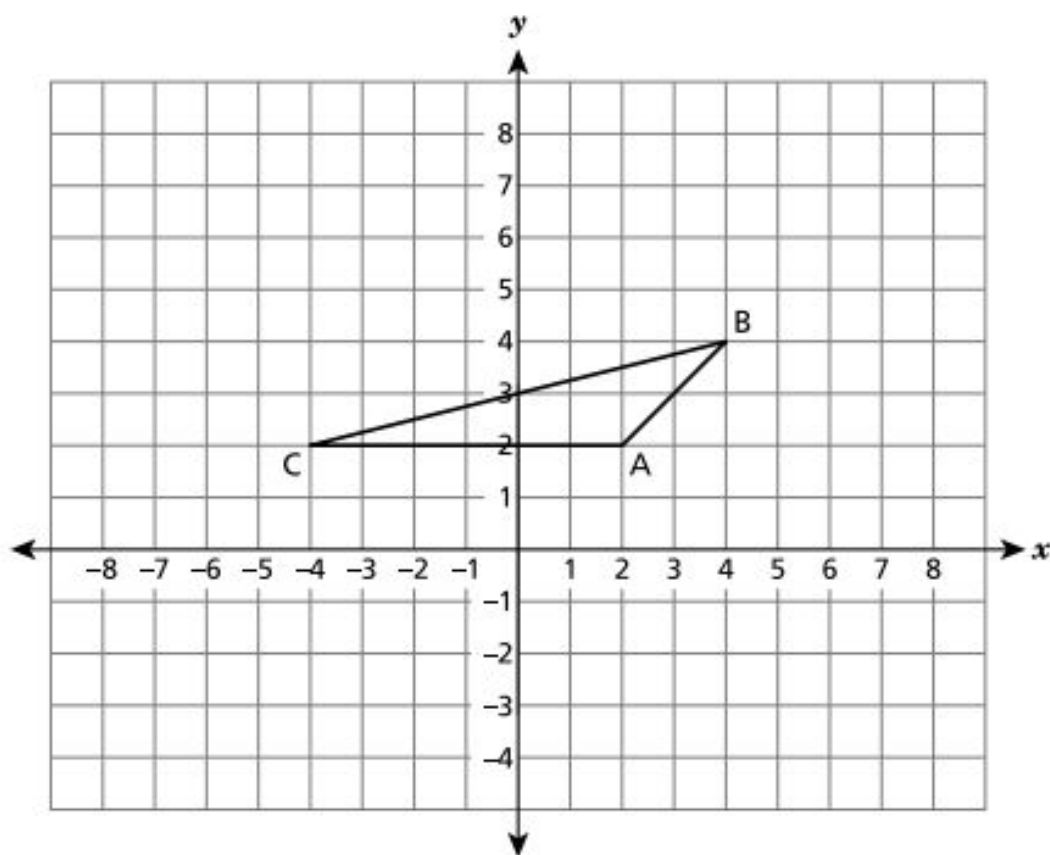Which graph represents a linear function of x ?

A

C

B

D

4

On a coordinate plane, vertex A for triangle ABC is located at $(6,4)$. Triangle ABC is dilated by a scale factor of 0.5 with the center of dilation at the origin. The resulting image is triangle $A'B'C'$. What are the coordinates of vertex A'?

A $\quad(3,2)$

B $\quad(12,8)$

C $\quad(5.5,3.5)$

D $\quad(6.5,4.5)$

Triangle ABC is graphed on a coordinate plane, as shown below.

Triangle ABC is dilated by a scale factor of 2 with a center of dilation at the origin to create $\triangle A'B'C'$. What are the coordinates of the vertices of $\triangle A'B'C'$?

A $(1,1), (2,2), (-2,1)$

B $(4,2), (8,6), (-8,2)$

C $(4,4), (6,6), (-2,4)$

D $(4,4), (8,8), (-8,4)$
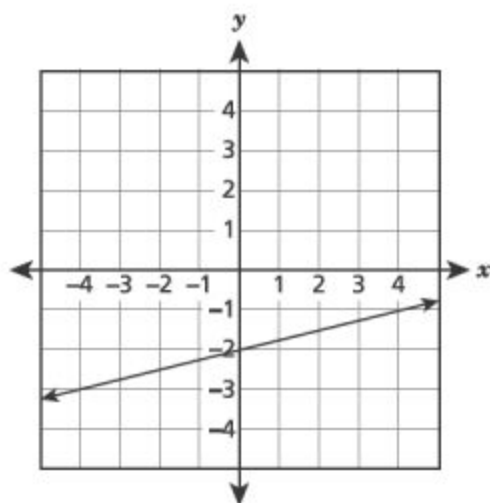
6

Which function of x has the **least** value for the y-intercept?

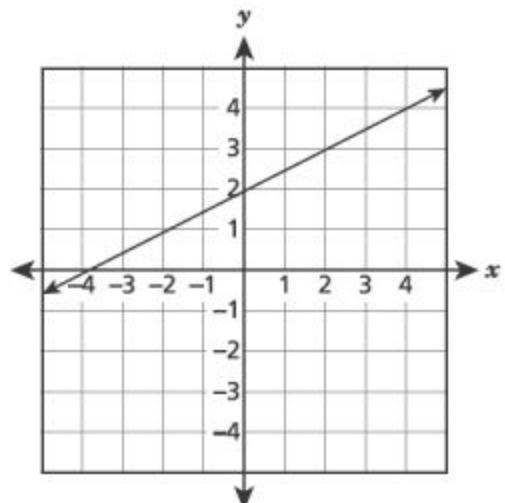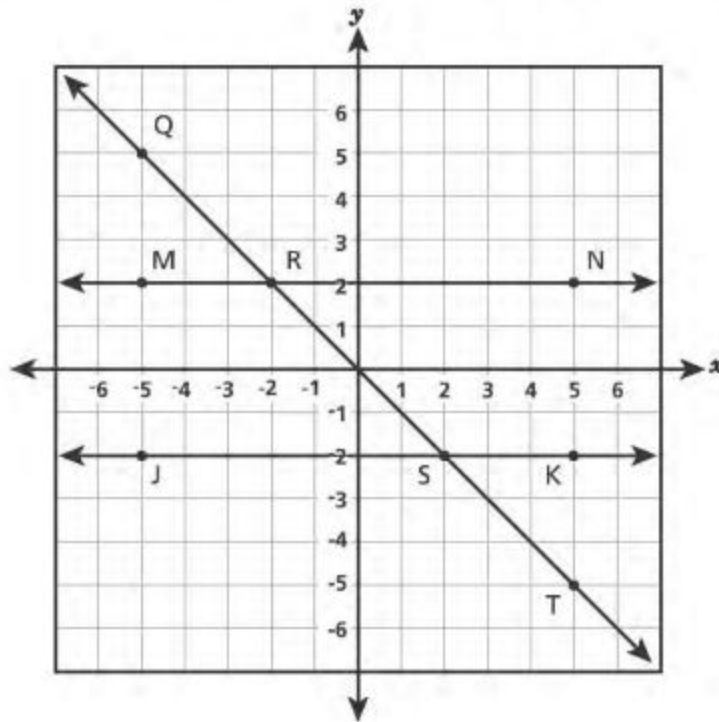A $y = -4x + 15$ C $y = 2x - 3$

B

D

7
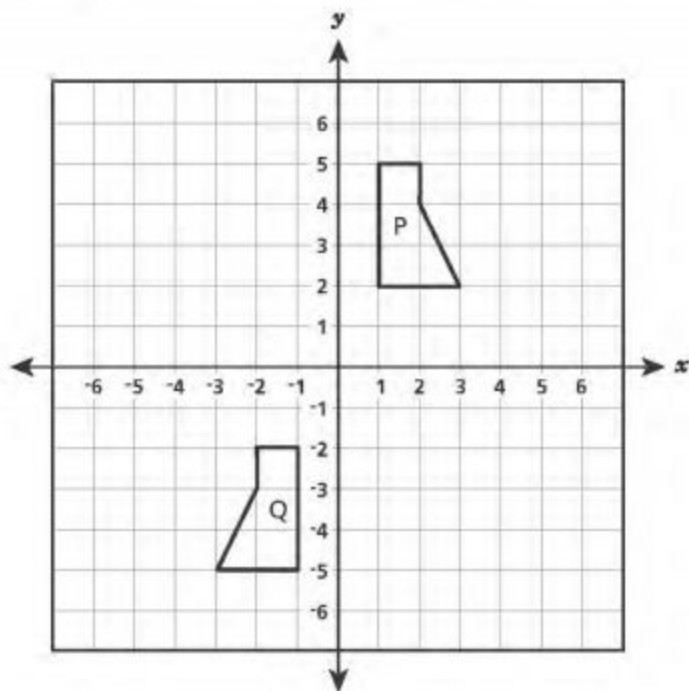
In the diagram below, lines MN and JK are parallel and are intersected by line QT.

Which transformation could be used to show that ∠ QRN is congruent to ∠ RSK ?

   A. Reflect ∠ QRN over the x -axis

   B. Rotate ∠ QRN about the origin

   C. Translate ∠ QRN down and to the right

   D. Dilate ∠ QRN by a scale factor of two with the center at point R

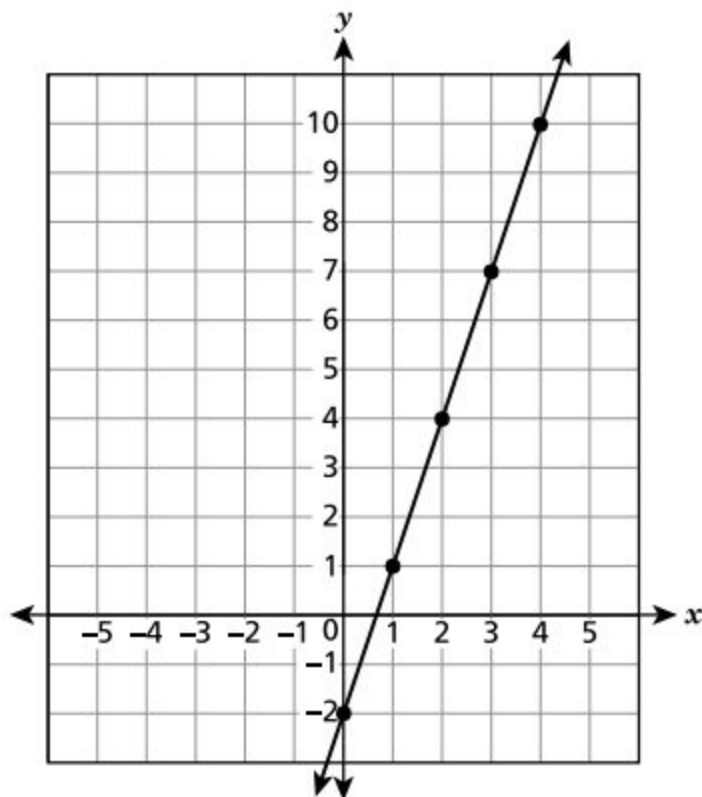## 8

Pentagon P and pentagon Q, shown below, are congruent.

Describe the sequence of rigid transformations that you could use to transform Pentagon P to Pentagon Q. Explain your answer on the lines below.

_____

_____

_____

_____

The table and graph shown below each represent a function of x.

FUNCTION A

x	y
1	5
2	7
3	9
5	13
6	15

FUNCTION B

Which function, A or B, has a greater rate of change? Be sure to include the values for the rates of change in your answer.

Explain your answer.

_____

_____

_____

_____

10

The values in the table below represent Function B, which is a linear function.

x	y
−3	−7
−1	−1
1	5
3	11

Function L is represented by the equation y = 5x + 3. Compare functions B and L by determining which one has the greater rate of change and which one has the greater y-intercept. Explain why your answers are correct.

Show your work.

_____

_____

_____

_____

11

The ordered pairs below represent a linear function.

$$\left(\frac{3}{4}, 6\frac{1}{4}\right), \left(1\frac{1}{4}, 7\frac{3}{4}\right), (x, y)$$

Which values could be the values of x and y?

Show your work.

Answer $x =$ _____

$y =$ _____

12

The set of ordered pairs below represents a linear function.

$$\{(-2,-3),\ (0,-2),\ (2,-1),\ (x,y)\}$$

What is one other pair of coordinates that could be the missing ordered pair, (x,y), in this set?

Show your work.

Answer $x =$ _____

$y =$ _____

13

A triangle with vertices at A(-1, 1), B (-2, 1), and C (-1, 4) is translated. The image of vertex A has coordinates at (3, -1).

Determine the coordinates of either the image of vertex B or the image of vertex C.

Show your work.

*Answer:*_____

14

Triangle ABC goes through a series of three transformations, resulting in triangle $A'B'C'$. The three transformations are listed below.

- a rotation $180°$ clockwise about the origin

- a reflection over the x-axis

- a reflection over the y-axis

Triangle ABC has vertex A located at $(2, -3)$. Using the coordinates of this point, explain how the three transformations map vertex A onto vertex A'.

Explain your answer.

_____

_____

_____

15

The two equations shown below represent different functions.

Function P: $y = \dfrac{3}{x} + 2$

Function Q: $y = \dfrac{1}{3}x + 2$

Identify each function as linear or nonlinear. State a reason why each function is linear or nonlinear.

Function P _____

State your reason.

_____

_____

_____

Function Q _____

State your reason.

_____

_____

_____