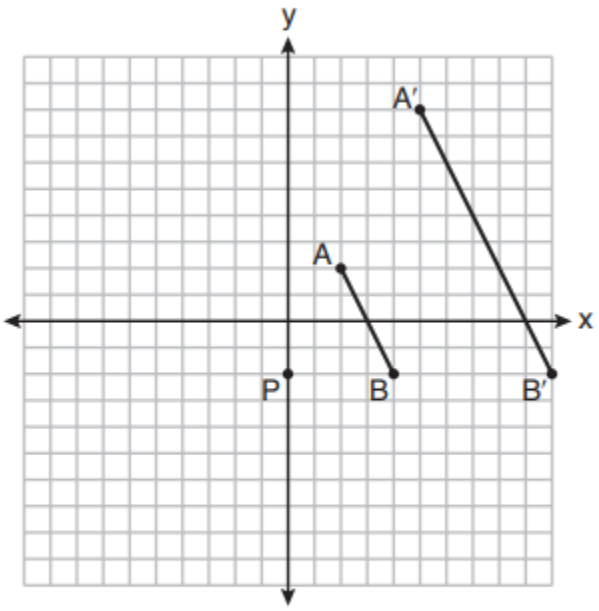
Geometry 1 Quick Quiz

September 09,2019

1 On the set of axes below, $\overline{AB}$ is dilated by a scale factor of $\frac{5}{2}$ centered at point P.



Which statement is always true?

(1) $\overline{PA} \cong \overline{AA'}$

(2) $\overline{AB} \parallel \overline{A'B'}$

(3) $AB = A'B'$

(4) $\frac{5}{2}(A'B') = AB$

2 The coordinates of the vertices of parallelogram $CDEH$ are $C(-5,5)$, $D(2,5)$, $E(-1,-1)$, and $H(-8,-1)$. What are the coordinates of P, the point of intersection of diagonals $\overline{CE}$ and $\overline{DH}$?

(1) $(-2,3)$
(2) $(-2,2)$
(3) $(-3,2)$
(4) $(-3,-2)$

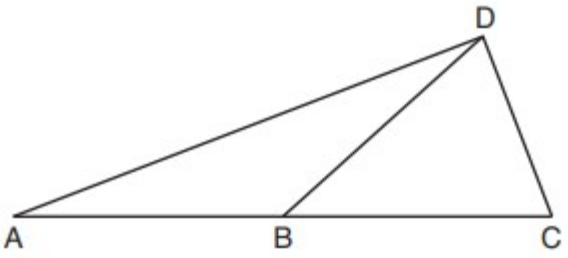
3 The coordinates of the endpoints of $\overline{QS}$ are $Q(-9,8)$ and $S(9,-4)$. Point R is on $\overline{QS}$ such that $QR:RS$ is in the ratio of 1:2. What are the coordinates of point R?

(1) $(0,2)$
(2) $(3,0)$
(3) $(-3,4)$
(4) $(-6,6)$

4 If the altitudes of a triangle meet at one of the triangle's vertices, then the triangle is

(1) a right triangle
(2) an acute triangle
(3) an obtuse triangle
(4) an equilateral triangle

5 In the diagram below of $\triangle ACD$, $\overline{DB}$ is a median to $\overline{AC}$, and $\overline{AB} \cong \overline{DB}$.



If $m\angle DAB = 32°$, what is $m\angle BDC$?

(1) 32°
(2) 52°
(3) 58°
(4) 64°

6 What are the coordinates of the center and the length of the radius of the circle whose equation is $x^2 + y^2 = 8x - 6y + 39$?

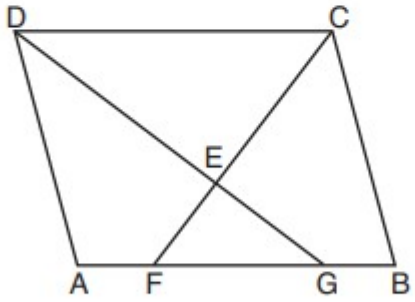
(1) center $(-4,3)$ and radius 64

(2) center $(4,-3)$ and radius 64

(3) center $(-4,3)$ and radius 8

(4) center $(4,-3)$ and radius 8

7 In the diagram below of parallelogram $ABCD$, $\overline{AFGB}$, $\overline{CF}$ bisects $\angle DCB$, $\overline{DG}$ bisects $\angle ADC$, and $\overline{CF}$ and $\overline{DG}$ intersect at E.



If $m\angle B = 75°$, then the measure of $\angle EFA$ is

(1) 142.5°

(2) 127.5°

(3) 52.5°

(4) 37.5°

8 What is an equation of a line that is perpendicular to the line whose equation is $2y + 3x = 1$?

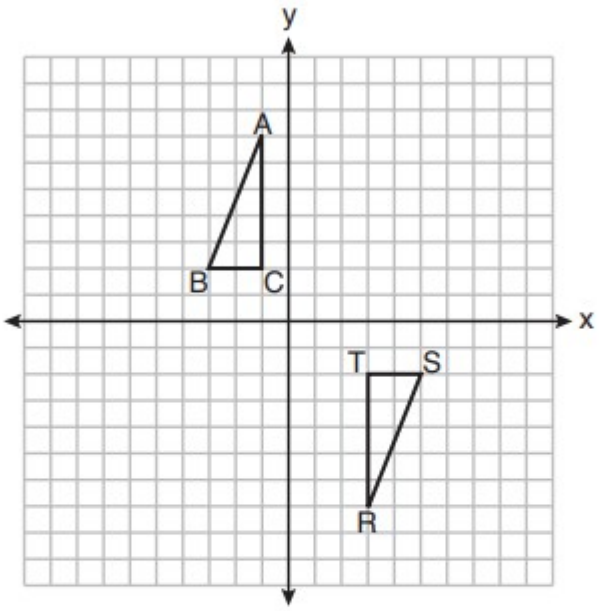
(1) $y = \frac{2}{3}x + \frac{5}{2}$

(2) $y = \frac{3}{2}x + 2$

(3) $y = -\frac{2}{3}x + 1$

(4) $y = -\frac{3}{2}x + \frac{1}{2}$

9 Triangles ABC and RST are graphed on the set of axes below.



Which sequence of rigid motions will prove $\triangle ABC \cong \triangle RST$?

(1) a line reflection over $y = x$

(2) a rotation of 180° centered at (1,0)

(3) a line reflection over the x-axis followed by a translation of 6 units right

(4) a line reflection over the x-axis followed by a line reflection over $y = 1$

10 If the line represented by $y = -\frac{1}{4}x - 2$ is dilated by a scale factor of 4 centered at the origin, which statement about the image is true?

(1) The slope is $-\frac{1}{4}$ and the y-intercept is -8.

(2) The slope is $-\frac{1}{4}$ and the y-intercept is -2.

(3) The slope is -1 and the y-intercept is -8.

(4) The slope is -1 and the y-intercept is -2.

BONUS

11.

Square *MATH* has a side length of 7 inches. Which three-dimensional object will be formed by continuously rotating square *MATH* around side $\overline{AT}$?

(1) a right cone with a base diameter of 7 inches

(2) a right cylinder with a diameter of 7 inches

(3) a right cone with a base radius of 7 inches

(4) a right cylinder with a radius of 7 inches

Reference Sheet

High School Mathematics Assessment Reference Sheet

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 5280 feet
1 mile = 1760 yards
1 mile = 1.609 kilometers

1 kilometer = 0.62 mile
1 pound = 16 ounces
1 pound = 0.454 kilograms
1 kilogram = 2.2 pounds
1 ton = 2000 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 gallons
1 liter = 1000 cubic centimeters

Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$
Circle	$C = \pi d \text{ or } C = 2\pi r$
General Prisms	$V = Bh$
Cylinder	$V = \pi r^2 h$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \frac{1}{3}\pi r^2 h$
Pyramid	$V = \frac{1}{3}Bh$

Quadratic Formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Arithmetic Sequence	$a_n = a_1 + (n-1)d$
Geometric Sequence	$a_n = a_1 r^{n-1}$
Geometric Series	$S_n = \frac{a_1 - a_1 r^n}{1-r}$ where $r \neq 1$
Radians	1 radian $= \frac{180}{\pi}$ degrees
Degrees	1 degree $= \frac{\pi}{180}$ radians