Name:

10 March 2023

## 8.8 Unit exam: Regents standards

v1

1. What is the sum of the measures of two complementary angles?

HSG.CO.C.10

(a)  $45^{\circ}$ 

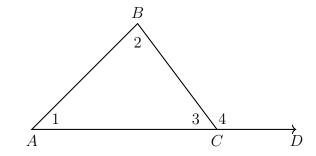
(c)  $120^{\circ}$ 

(b)  $90^{\circ}$ 

(d)  $180^{\circ}$ 

2. Given  $\triangle ABC$  with  $\overrightarrow{ACD}$ .

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Which equation is always true?

(a) 
$$m \angle 4 = m \angle 3 - m \angle 2$$

(c) 
$$m \angle 3 = m \angle 1 - m \angle 2$$

(b) 
$$m \angle 3 = m \angle 1 + m \angle 2$$

(d) 
$$m \angle 4 = m \angle 1 + m \angle 2$$

3. A regular octagon is rotated about its center. Which degree measure will carry the polygon onto itself?

(a)  $30^{\circ}$ 

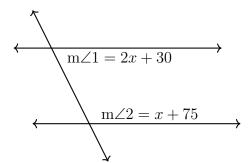
(c)  $60^{\circ}$ 

(b) 45°

(d)  $72^{\circ}$ 

4. Two parallel lines intersect a transversal. The same side interior angles measure  $m\angle 1 = 2x + 30$  and  $m\angle 2 = x + 75$ . What is the value of x?

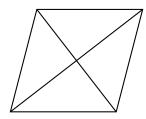
- (a)  $25^{\circ}$
- (b) 34°
- (c) 45°
- (d)  $53^{\circ}$



5.	In the line segment $\overline{ABC}$ , $\overline{AB}$ is twice as lor Find $BC$ .	$\operatorname{ang as } \overline{BC}. \ AB = 12x - 6 \text{ and } AC = 15x + 9.$
	(a) 31	(c) 36
	(b) 33	(d) 42
6.	What is the midpoint of $\overline{AB}$ , with $A(1.7, -1.7)$	(-2) and $B(4.5, -5.2)$ ? GPE.B.6
٠.	(a) $(0.3, -7.2)$	(c) (7.2, -3.2)
	(b) (3.6, -1.6)	(d) $(3.1, -3.6)$
	(0) $(3.0, -1.0)$	(d) (5.1, -5.0)
7.	The endpoints of directed line segment $PQ$ What are the coordinates of point $A$ , on $\overline{P}$	
	(a) $(-1, -1)$	(c) $(-43)$
	(b) $(-4, -6)$	(d) $(-6, -4)$
8.	The base of a pyramid is a rectangle with a width of 4.6 cm and a length of 9 cm. What is the height, in centimeters, of the pyramid if its volume is 82.8 cm <sup>3</sup> ? HSG.GMD.A.3	
	(a) 6	(c) 8
	(b) 7	(d) 10
9.	Lou has a solid clay brick in the shape of a rectangular prism with a length of 8 inches, a width of 3.5 inches, and a height of 2.25 inches. If the clay weighs 1.055 oz/in <sup>3</sup> , how much does Lou's brick weigh, to the nearest ounce?	
	(a) 53	(c) 66
	(b) 59	(d) 71

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- 10. Which three-dimensional figure will result when a rectangle 6 inches long and 5 inches wide is continuously rotated about the longer side?
  - (a) a rectangular prism with a length of 6 inches, width of 6 inches, and height of 5 inches
  - (b) a rectangular prism with a length of 6 inches, width of 5 inches, and height of 5 inches
  - (c) a cylinder with a radius of 5 inches and a height of 6 inches
  - (d) a cylinder with a radius of 6 inches and a height of 5 inches
- 11. The figure below shows a rhombus with noncongruent diagonals.



Which transformation would *not* carry this rhombus onto itself?

- (a) a reflection over the shorter diagonal
- (b) a reflection over the longer diagonal
- (c) a clockwise rotation of 90° about the intersection of the diagonals
- (d) a counterclockwise rotation of 180° about the intersection of the diagonals
- 12. What is the slope of a line perpendicular to the line with the equation y = -2x 15?
  - (a)  $-\frac{1}{2}$

(c) -2

(b)  $\frac{1}{2}$ 

- (d) 2
- 13. What is an equation of the line that passes through the point (-3,7) and is perpendicular to a line with equation  $y = \frac{2}{3}x + 5$ ?
  - (a)  $y-7=-\frac{3}{2}(x+3)$

(c)  $y+7=\frac{3}{2}(x+3)$ 

(b)  $y-7=\frac{3}{2}(x-3)$ 

- (d)  $y + 7 = -\frac{3}{2}(x 3)$
- 14. What is an equation of the image of the line  $y = \frac{3}{2}x 4$  after a translation down two?
  - (a)  $y = \frac{3}{2}x 2$

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

(b)  $y = \frac{3}{2}x - 6$ 

(d)  $y = -\frac{2}{3}x - 6$ 

15. What equation represents a line with a y-intercept of b=-5 that is parallel to the line represented by  $y=\frac{2}{5}x+1$ ?

(a) 
$$y = \frac{5}{2}x - 5$$

(c) 
$$y = \frac{2}{5}x - 5$$

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

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

16. Determine and state an equation of the line perpendicular to the line 2x - y = 7 and passing through the point (3, 11).

(a) 
$$y - 11 = -\frac{1}{2}(x - 3)$$

(c) 
$$y + 11 = 2(x - 3)$$

(b) 
$$y - 11 = \frac{1}{2}(x - 3)$$

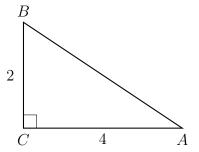
(d) 
$$y + 11 = -2(x - 3)$$

17. In the diagram below of right triangle ABC, AC=4, and BC=2. Find the length AB using the Pythagorean theorem.

(b) 
$$2\sqrt{5}$$

(c) 
$$5\sqrt{2}$$

(d) 
$$\sqrt{12}$$



18. What is the distance between the points (1, 11) and (7, 2) rounded to the nearest tenth?

19. Rhombus BECA has vertices B(3,2)4, E(7,5), C(11,2), and A(7,5). What is the perimeter of rhombus BECA?

(a) 16

(c) 20

(b) 18

(d) 24

20. Which point is further from the origin, (-13,0) or (5,-12)?

(a) (-13,0)

(c) both are equidistant from the origin

(b) (5, -12)

(d) one or more distance is undefined