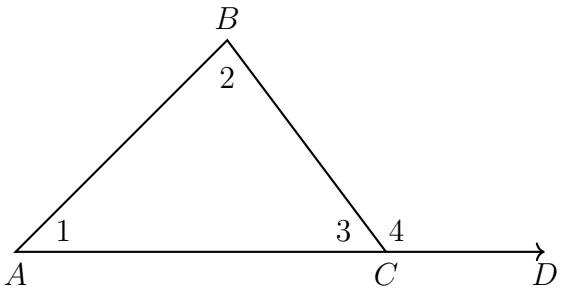
8.8 Unit exam: Regents standards **v1**

1. What is the sum of the measures of two complementary angles? HSG.CO.C.10

   (a) 45°
   (b) 90°
   (c) 120°
   (d) 180°

2. Given $\triangle ABC$ with $\overrightarrow{ACD}$. HSG.CO.C.10



   Which equation is always true?

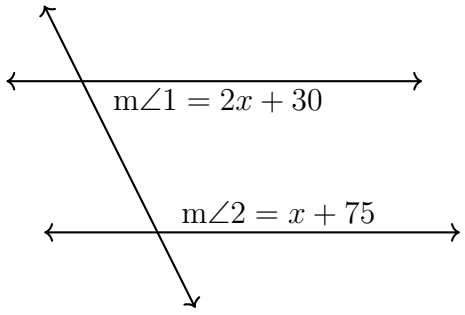
   (a) $m\angle 4 = m\angle 3 - m\angle 2$
   (b) $m\angle 3 = m\angle 1 + m\angle 2$
   (c) $m\angle 3 = m\angle 1 - m\angle 2$
   (d) $m\angle 4 = m\angle 1 + m\angle 2$

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

   (a) 30°
   (b) 45°
   (c) 60°
   (d) 72°

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

   (a) 25°
   (b) 34°
   (c) 45°
   (d) 53°



5. In the line segment $\overline{ABC}$, $\overline{AB}$ is twice as long as $\overline{BC}$. $AB = 12x - 6$ and $AC = 15x + 9$. Find BC.

   (a) 31
   (c) 36
   (b) 33
   (d) 42

6. What is the midpoint of $\overline{AB}$, with $A(1.7, -2)$ and $B(4.5, -5.2)$? GPE.B.6

   (a) $(0.3, -7.2)$
   (c) $(7.2, -3.2)$
   (b) $(3.6, -1.6)$
   (d) $(3.1, -3.6)$

7. The endpoints of directed line segment PQ have coordinates of $P(-7, -5)$ and $Q(5, 3)$. What are the coordinates of point A, on $\overline{PQ}$, that divide $\overline{PQ}$ into a ratio of 1:3?

   (a) $(-1, -1)$
   (c) $(-4, -3)$
   (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^3? 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^3, how much does Lou's brick weigh, to the nearest ounce?

   (a) 53
   (c) 66
   (b) 59
   (d) 71

10. Which three-dimensional figure will result when a rectangle 6 inches long and 5 inches wide is continuously rotated about the longer side?

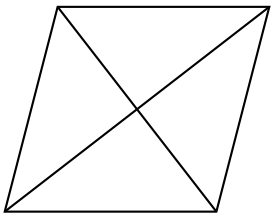
    (a) a rectangular prism with a length of 6 inches, width of 6 inches, and height of 5 inches

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

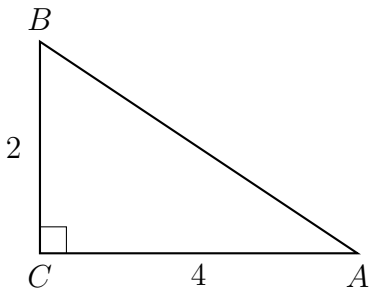
    (a) $y = \frac{5}{2}x - 5$
    (b) $y = \frac{5}{2}x + 5$
    (c) $y = \frac{2}{5}x - 5$
    (d) $y = \frac{2}{5}x + 5$

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

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

    (a) 6
    (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*?

    (a) 7.7
    (b) 8.1
    (c) 8.8
    (d) 10.8

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
    (b) 18
    (c) 20
    (d) 24

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

    (a) $(-13, 0)$
    (b) $(5, -12)$
    (c) both are equidistant from the origin
    (d) one or more distance is undefined