

8.6 Quiz: Parallel & perpendicular slopes, applications

1. Find the area of a circle sector with central angle 45° and radius 5. G.C.5

$$A = \frac{45}{360}(\pi)(5^2) = \frac{5}{18}\pi$$



2. What is the image of the point $(3, 4)$ after it is reflected across the x -axis? G.CO.5

$$(3, -4)$$



3. What is an equation of the image of the line $y = \frac{1}{4}x + 5$ after a translation up 2? G.GPE.1a

$$y = \frac{1}{4}x + 7$$

4. Write down the equation of a circle with center $(5, -3)$ and radius 2. G.GPE.1a

$$(x-5)^2 + (y+3)^2 = 4$$

5. Find the center and radius of the circle with equation $(x-2)^2 + (y+3)^2 = 16$.

Center $(2, -3)$
radius 4

6. What equation represents a line with a y -intercept of $b = 1$ that is perpendicular to the line represented by $y = -\frac{1}{2}x + 7$? G.GPE.5

$$y = 2x + 1$$

7. Write an equation of the line that is parallel to the line whose equation is $4x - 2y = 7$ and passes through the point $(3, 5)$.

$$y - 5 = 2(x - 3)$$

or
 $y = 2x - 1$

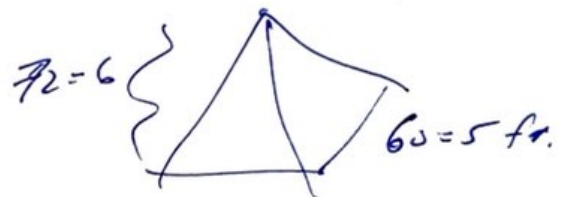
$$\begin{aligned} -2y &= -4x + 7 \\ y &= 2x - \frac{7}{2} \end{aligned}$$

8. Find the volume of a rectangular prism having the dimensions length 10, width 5, and height 3. G.GMD.3

$$V = 10 \cdot 5 \cdot 3 = 150$$

9. A tent in the form of a pyramid with a square base has sides measuring 60 inches and height of 72 inches. What is the volume of the tent rounded to the nearest cubic foot?

$$V = \frac{1}{3} (s^2) (h) \\ = 50 \text{ ft}^3$$



10. Find the weight, rounded to the nearest gram, of a solid lead cannonball with a diameter of 10 centimeters. Lead has a density of 11.34 grams per cubic centimeter.

$$r = 5$$

$$V = \frac{4}{3} \pi r^3 = 523.598...$$

$$W = 523.598... \cdot 11.34 = 5937.610... \\ \approx 5938$$

11. The angle of elevation to the top of a tower located 800 feet away is 12° . Find the height of the tower. G.SRT.8

$$\tan 12 = \frac{x}{800}$$

$$x = 800 \tan 12 \\ = 170.0045...$$

$$\approx 170 \text{ ft.}$$

