

**(KEY)**

Geometry – Chapter 3 Review

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slope of the line through each pair of points.

1)  $(-8, -4), (8, -6)$   
 $x_1 \ y_1 \ x_2 \ y_2$

2)  $(6, -11), (4, -14)$   
 $x_1 \ y_1 \ x_2 \ y_2$

3)  $(-2, 18), (-13, -18)$   
 $x_1 \ y_1 \ x_2 \ y_2$

$$m = -\frac{(-6) + 4}{8 + 8} = \frac{-2}{16} = \boxed{\frac{-1}{8}}$$

$$m = \frac{-14 + 11}{4 - 6} = \frac{-3}{-2} = \boxed{\frac{3}{2}}$$

$$m = \frac{-18 - 18}{-13 + 2} = \frac{-36}{-11} = \boxed{\frac{36}{11}}$$

Find the slope of the line parallel to each given line. (parallel  $\rightarrow$  same slope)

4)  $y = -\frac{7}{3}x + 3$   
 $y = mx + b$   
 $\uparrow$   
 slope  
 $m = \boxed{-\frac{7}{3}}$

5)  $y = 3x + 1$   
 $m = \boxed{3}$

6)  $y = \frac{3}{4}x - 2$   
 $m = \boxed{\frac{3}{4}}$

Find the slope of the line perpendicular to each given line. (perpendicular  $\rightarrow$  opposite reciprocals)

7)  $y = 5x + 2$   
 $m = \frac{5}{1}$   
 perp. slope =  $\boxed{-\frac{1}{5}}$

8)  $y = -\frac{3}{4}x - 3$   
 $m = -\frac{3}{4}$   
 perp. slope =  $\boxed{\frac{4}{3}}$

9)  $y = \frac{7}{3}x + 3$   
 $m = \frac{7}{3}$   
 perp. slope =  $\boxed{-\frac{3}{7}}$

Write the equation of each line that passes through the given point with the given slope.

10) Through  $(3, 5)$  with slope  $-7$

$y = mx + b$   
 $5 = -7(3) + b$   
 $5 = -21 + b$   
 $+21 \ +21$   
 $26 = b$

$y = -7x + 26$

11. Through  $(-5, -3)$  with slope  $\frac{8}{5}$

$y = mx + b$   
 $-3 = \frac{8}{5}(-5) + b$   
 $-3 = -8 + b$   
 $+8 \ +8$   
 $b = 5$

$y = \frac{8}{5}x + 5$

12) Tom and Jerry start at the same point. Tom walks straight south for 3 miles, while Jerry walks straight west for 2 miles. What is their exact distance apart?



$$a^2 + b^2 = c^2$$

$$2^2 + 3^2 = c^2$$

$$4 + 9 = c^2$$

$$13 = c^2$$

$c = \sqrt{13}$

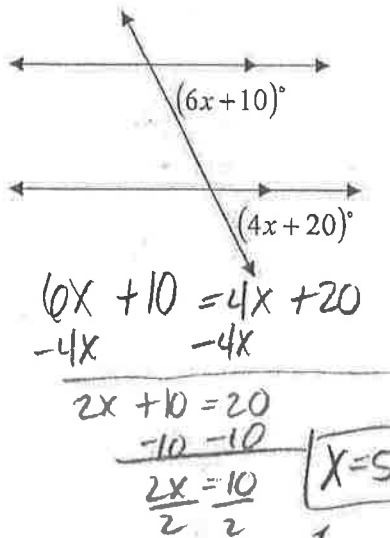
13. What is the area of a circle with diameter of 7 m?

$$A = \pi r^2$$

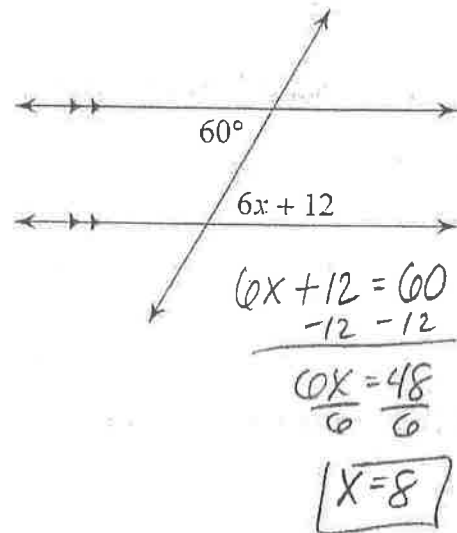
$$A = \pi (3.5)^2 = 38.5 \text{ m}^2$$

Find the value of all missing variables.

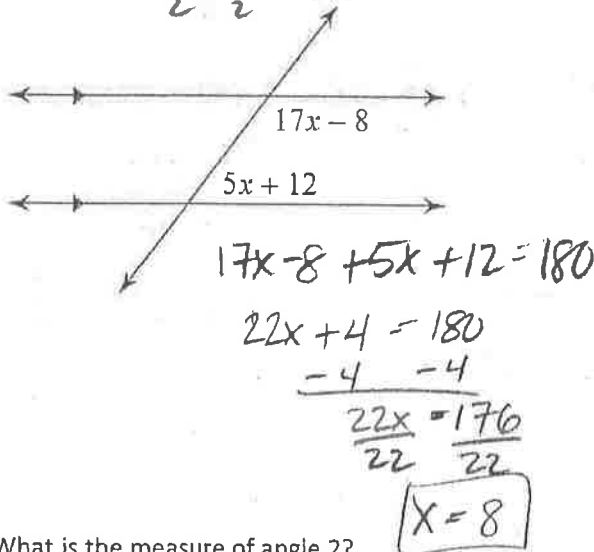
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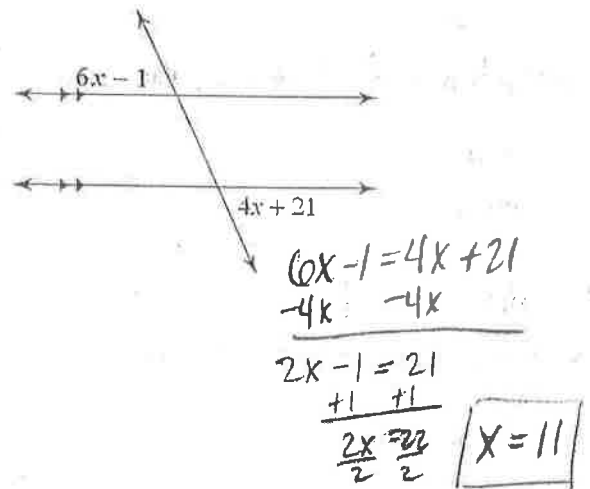
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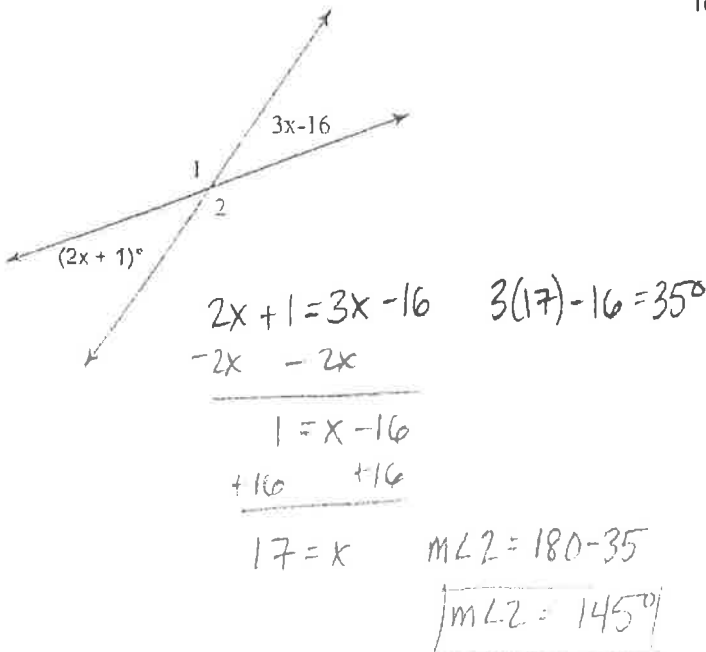
16.



17.



18. What is the measure of angle 2?



19. Which expression represents the pattern for the number of cubes in figure n?

Figure 1

Figure 2

Figure 3

a)  $n(n+3+4)$

b)  $2n-1$

c)  $\frac{n(n+3)}{2}$

d)  $\frac{n(n+2)}{2}$

$\frac{n(n+3)}{2}$

Fig 1:  $n=1 \quad \frac{1(1+3)}{2} = 2$

Fig 2:  $n=2 \quad \frac{2(2+3)}{2} = 5$

Fig 3:  $n=3 \quad \frac{3(3+3)}{2} = 9$