

W-6 Geometry 10/5 Week 5

Distance and Midpoint Formula

$$\begin{matrix} x & y \\ (-2, & 6) \end{matrix}$$

$$\begin{matrix} x & y \\ (3, & -6) \end{matrix}$$

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\text{Midpoint: } \left( \frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)$$

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$= \sqrt{(-2 - 3)^2 + (6 - (-6))^2}$$

$$\sqrt{(-5)^2 + (12)^2}$$

$$\sqrt{25 + 144}$$

$$\sqrt{169} = \boxed{13}$$

$$\left( \frac{-2 + 3}{2}, \frac{6 + (-6)}{2} \right)$$

$$\boxed{\left( \frac{1}{2}, 0 \right)}$$

Look for perfect squares

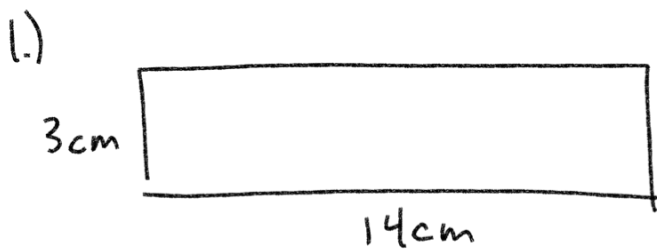
1, 4, 9, 16, 25, 36, 49, 64, 81, 100

$$\begin{array}{c} \sqrt{80} \\ \swarrow \quad \searrow \\ \sqrt{4} \quad \sqrt{20} \\ \downarrow \quad \swarrow \quad \searrow \\ 2 \quad \sqrt{4} \quad \sqrt{5} \end{array}$$

$$\begin{aligned} \sqrt{80} &= \sqrt{4} \cdot \sqrt{4} \cdot \sqrt{5} \\ &\downarrow \quad \downarrow \quad \cdot \sqrt{5} \\ 2 \cdot 2 \cdot \sqrt{5} &= \boxed{4\sqrt{5}} \end{aligned}$$

$$\begin{aligned} \sqrt{80} &= \sqrt{16} \cdot \sqrt{5} \\ &\downarrow \\ 4\sqrt{5} &= \boxed{4\sqrt{5}} \end{aligned}$$

$$\begin{array}{c} \sqrt{80} \\ \swarrow \quad \searrow \\ \sqrt{16} \quad \sqrt{5} \end{array}$$



Find

Area:  $A = L \times H = (14 \text{ cm})(3 \text{ cm})$   
 $= \boxed{42 \text{ cm}^2}$

Perimeter

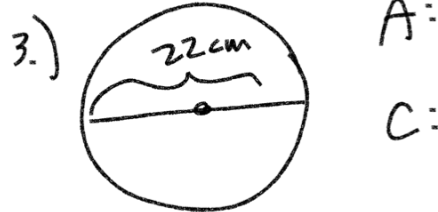
$P = 2L + 2H$

$2(14 \text{ cm}) + 2(3 \text{ cm}) = \boxed{34 \text{ cm}}$   
 $28 + 6$



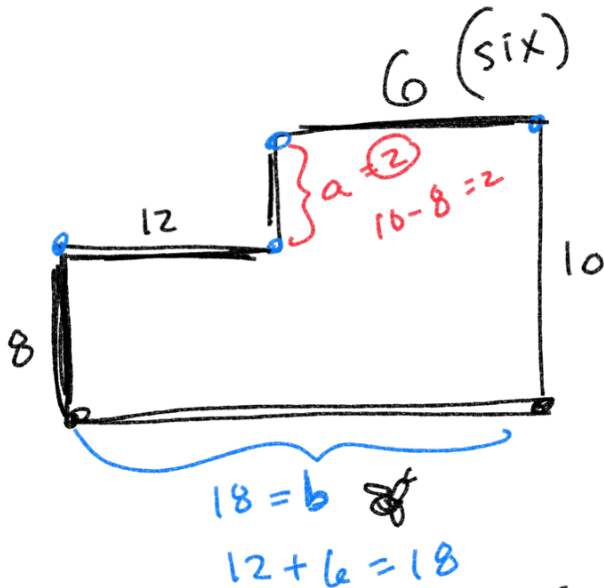
$A = \pi r^2 = \pi (6 \text{ m})^2 = \boxed{36\pi \text{ m}^2}$

$C = 2\pi r = 2\pi (6 \text{ m}) = \boxed{12\pi \text{ m}}$



$A = \pi \left(\frac{d}{2}\right)^2 = \pi \left(\frac{22}{2}\right)^2 = \pi (11)^2$   
 $= \boxed{121\pi \text{ cm}^2}$

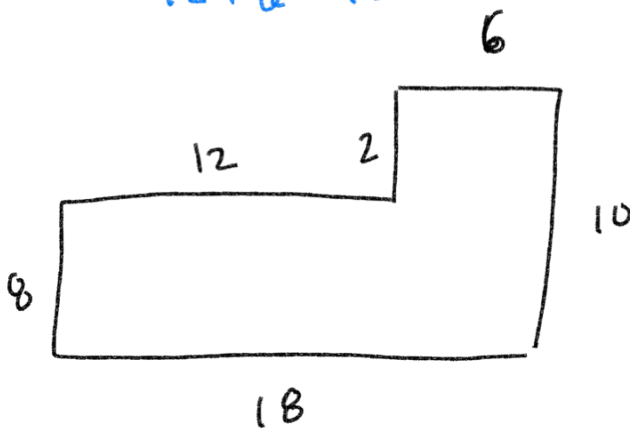
$C = \pi d$   
 $= \pi (22 \text{ cm}) = \boxed{22\pi \text{ cm}}$



Not drawn to scale

Perimeter

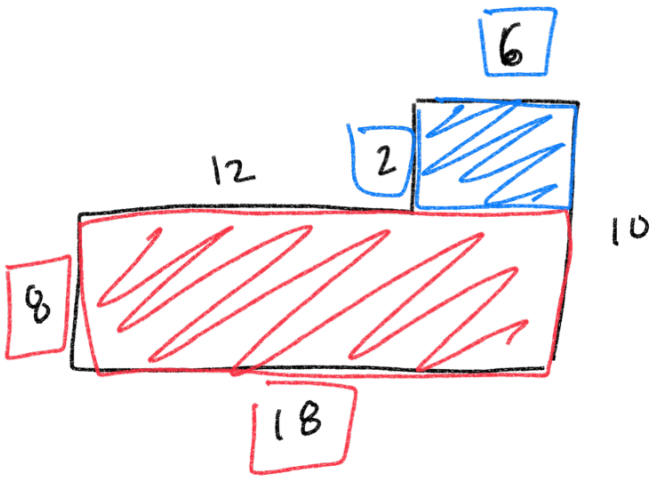
$P = 18 + 8 + 12 + 2 + 6 + 10$   
 $= \boxed{56 \text{ units}}$



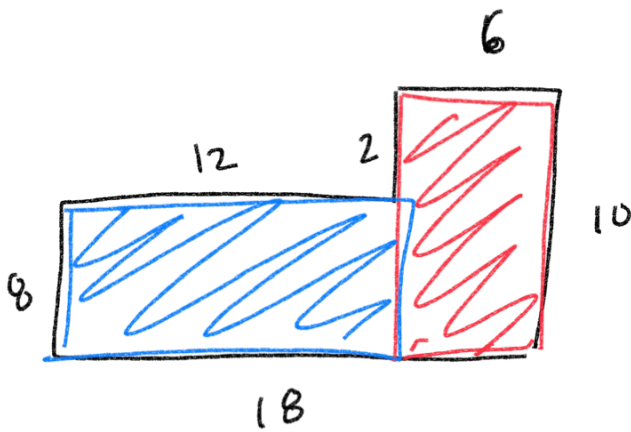
Area: Either find sum  
 of two figures

or

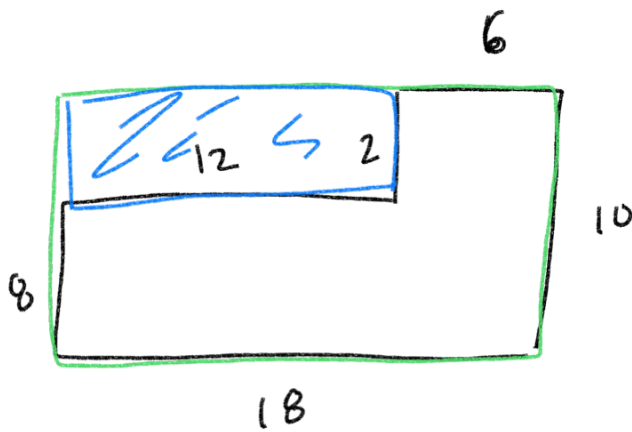
Subtract missing from  
 the whole



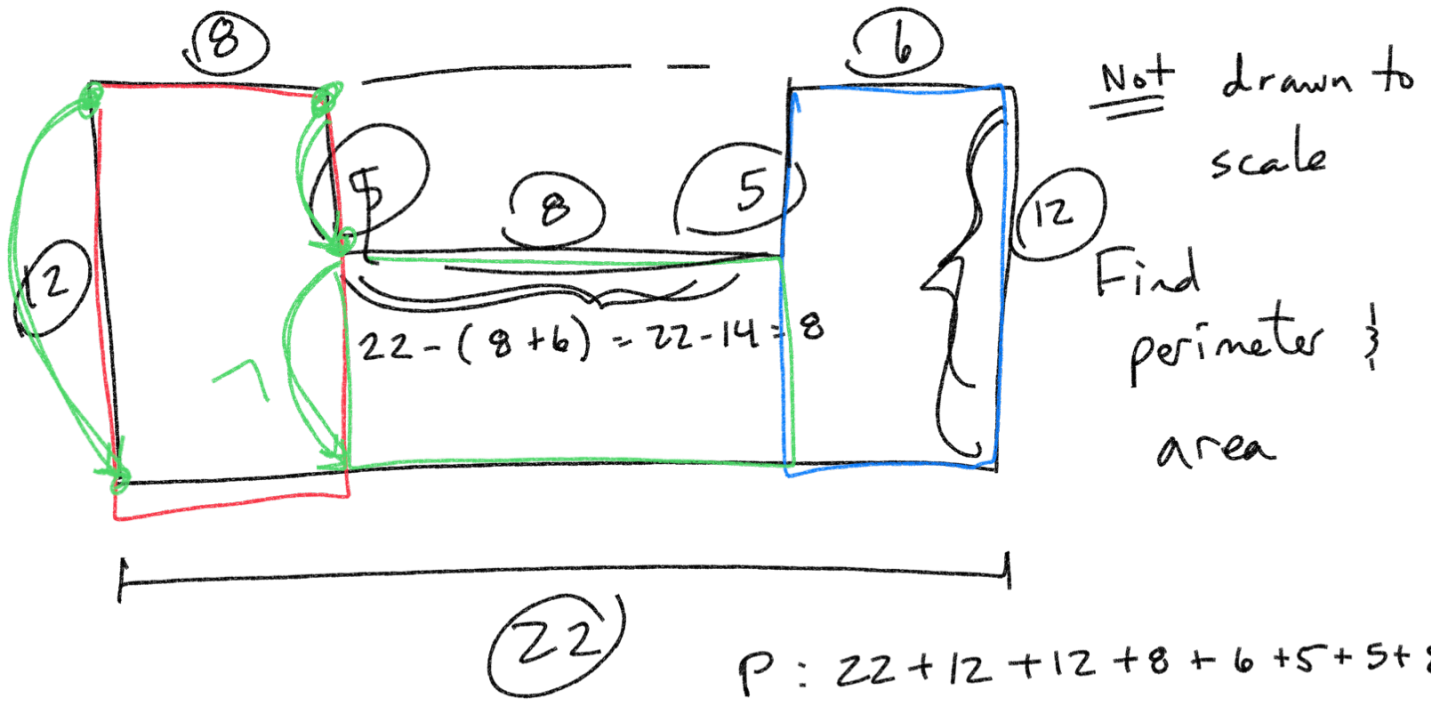
<u>Red</u>	<u>Blue</u>	
$18 * 8$	$6 * 2$	
144	+ 12	$= 156 \text{ units}^2$



<u>Red</u>	<u>Blue</u>	
$6 * 10$	$12 * 8$	
60	+ 96	$= 156 \text{ units}^2$



Whole Area	Missing	
$18 * 10$	$2 * 12$	
180	- 24	$= 156 \text{ units}^2$



Red    Blue    Green  
 $8 * 12$      $6 * 12$      $8 * 7$

78 units

$96 + 72 + 56 = 224 \text{ units}^2$