

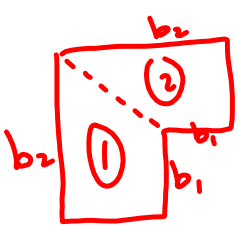
## Composite Shapes    *Complex Figures*

**What are they?** Shapes that are made of other familiar shapes, but on their own may not have their own area formulas.

**Decomposition:** The process of breaking apart something. With shapes, breaking a larger shape into smaller shapes.

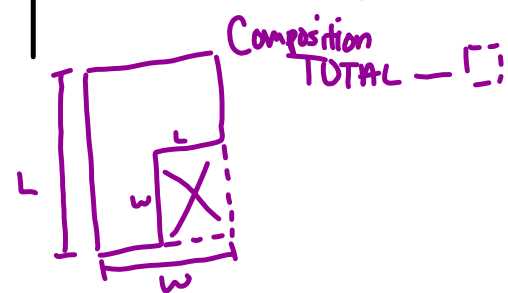
Method 1:

$A_1$  Rectangle  
 $A = lw$   
 $A = 3 \cdot 3$   
 $A = 15 \text{ ft}^2$   
 $A_2$  Rectangle  
 $A = lw$   
 $A = 3 \cdot 2$   
 $A = 6 \text{ ft}^2$   
**TOTAL:**  $A_1 + A_2$   
 $15 + 6$   
 $= 21 \text{ ft}^2$



Method 2:

$\textcircled{A}$  Rectangle  
 $A = lw$   
 $A = 6 \cdot 2$   
 $A = 12 \text{ ft}^2$   
 $\textcircled{B}$  Rectangle  
 $A = lw$   
 $A = 3 \cdot 3$   
 $A = 9 \text{ ft}^2$   
**TOTAL:**  $A + B$   
 $12 + 9$   
 $= 21 \text{ ft}^2$



Extra Examples/Practice:

① Rectangle  
 $A = lw$   
 $A = 24 \cdot 8$   
 $A = 192 \text{ ft}^2$

② Triangle  
 $A = \frac{1}{2}bh$   
 $A = \frac{1}{2}(24)(4)$   
 $A = 48 \text{ ft}^2$

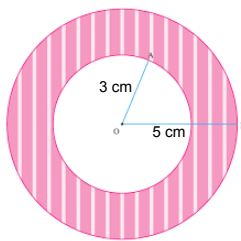
TOTAL: ① + ②  
 $192 + 48$   
 $= 240 \text{ ft}^2$

① Triangle  
 $A = \frac{1}{2}bh$   
 $A = \frac{1}{2}(10)(15)$   
 $A = 75 \text{ in}^2$

② Semi-Circle  
 $A = \pi r^2 \cdot \frac{1}{2}$   
 $A \approx 3.14(5)^2 \cdot \frac{1}{2}$   
 $A \approx 3.14(25) \cdot \frac{1}{2}$   
 $A \approx 78.5 \cdot \frac{1}{2}$   
 $A \approx 39.25 \text{ in}^2$

TOTAL:  
 ① + ②  
 $75 + 39.25$   
 $= 114.25 \text{ in}^2$

Find the area of the shaded region:



Big O - Small O

$A = \pi r^2$   
 $A \approx 3.14(5)^2$   
 $A \approx 3.14(25)$   
 $A \approx 78.5 \text{ cm}^2$

$A = \pi r^2$   
 $A \approx 3.14(3)^2$   
 $A \approx 3.14(9)$   
 $A \approx 28.26 \text{ cm}^2$

Shaded:  $78.5 - 28.26$   
 $= 50.24 \text{ cm}^2$

~~Wrong~~

~~$\pi r^2$~~   
 ~~$3.14(2)^2$~~   
 ~~$3.14(4)$~~   
 ~~$12.56$~~