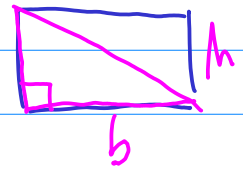


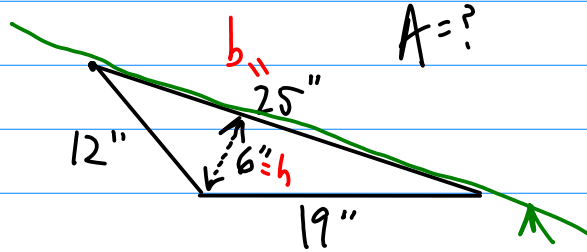
§8.2: Area of Δ 's, Trapezoids, & Kites



$$\frac{1}{2} \cdot \frac{b}{1} \cdot \frac{h}{1} = \frac{bh}{2}$$

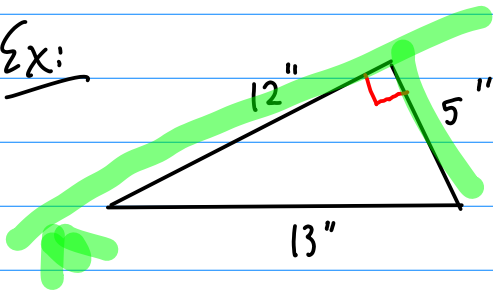
$$* A_{\Delta} = \frac{1}{2} \cdot b \cdot h = \frac{bh}{2}$$

Ex:



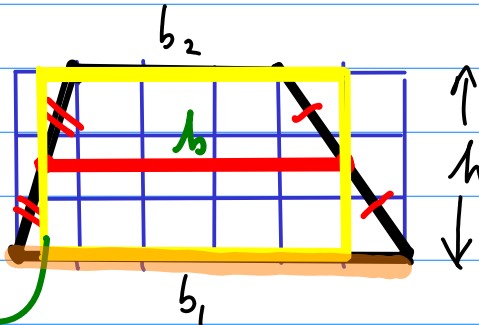
$$\begin{aligned} A_{\Delta} &= \frac{1}{2} b h \\ &= \frac{1}{2} (25") (6") \\ &= \boxed{75 \text{ in}^2} \\ &\text{or} \\ &75 \text{ sq in.} \end{aligned}$$

Ex:



$$\begin{aligned} A_{\Delta} &= \frac{1}{2} b h \\ &= \frac{1}{2} (12 \text{ in}) (5 \text{ in}) \\ &= 30 \text{ in}^2 \end{aligned}$$

• Trapezoids:



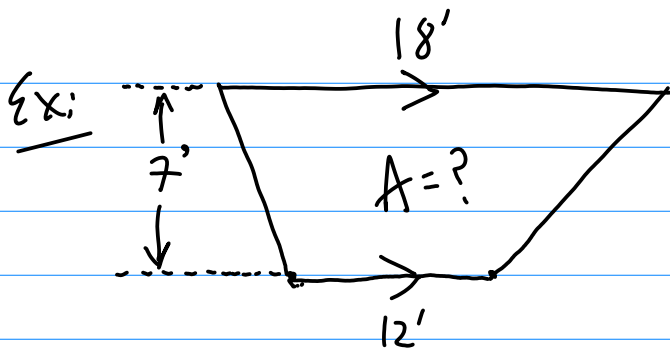
$$b_2 < b < b_1$$

$$A_{\text{RECT}} = b \cdot h$$

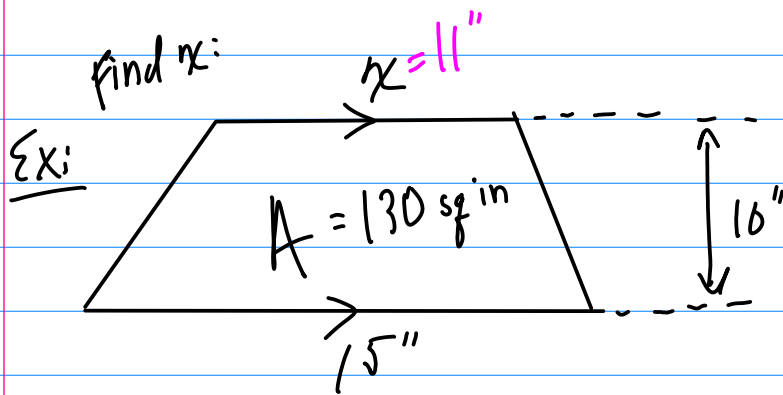
*

$$A_{\text{TRAP}} = \left(\frac{b_1 + b_2}{2} \right) h$$

PEMDAS



$$\begin{aligned}
 A_{\text{TRAP}} &= \left(\frac{b_1 + b_2}{2} \right) h \\
 &= \left(\frac{12' + 18'}{2} \right) (7') \\
 &= \left(\frac{30'}{2} \right) (7') \\
 &= (15')(7') \\
 &= \boxed{105 \text{ ft}^2}
 \end{aligned}$$

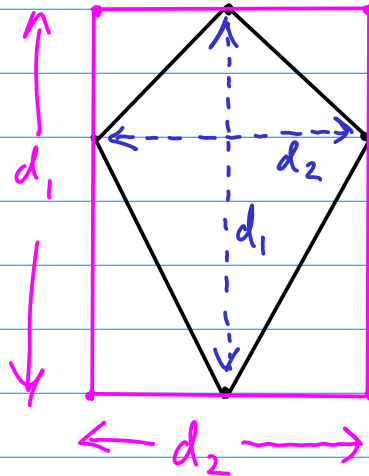


$$\begin{aligned}
 A_{\text{TRAP}} &= \left(\frac{b_1 + b_2}{2} \right) h \\
 130 &= \left(\frac{15 + x}{2} \right) \cdot 10
 \end{aligned}$$

$$\frac{130}{10} = \frac{15 + x}{2}$$

$$\begin{aligned}
 26 &= 15 + x \\
 -15 &-15 \\
 \hline
 11 &= x
 \end{aligned}$$

• Kites:



$$A_{\text{RECT}} = b h$$

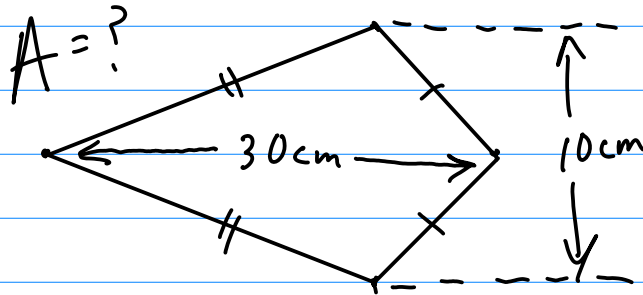
$$= d_1 \cdot d_2$$

$$A_{\text{KITE}} = \frac{1}{2} A_{\text{RECT}}$$

$$A_{\text{KITE}} = \frac{1}{2} d_1 d_2$$

*

Ex:



$$\begin{aligned} A_{\text{KITE}} &= \frac{1}{2} d_1 d_2 \\ &= \frac{1}{2} (30 \text{ cm}) (10 \text{ cm}) \\ &= 150 \text{ cm}^2 \end{aligned}$$