


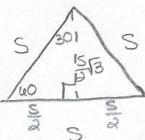
Section 11.2

Formulas:

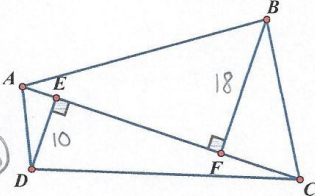
1. Notecard activity

$$A_{\text{triangle}} = \frac{1}{2} b \cdot h$$

2.  Right triangle  
 $\frac{1}{2} b \cdot h = \frac{1}{2} \text{leg} \cdot \text{leg}$

3.   $A_{\text{eq. } \Delta} = \frac{1}{2} S \cdot \frac{S\sqrt{3}}{2}$   
 $= \frac{S^2\sqrt{3}}{4}$

Find the area of quadrilateral ABCD if AC = 35, BF = 18, and DE = 10



$$A_{ABCD} = A_{\Delta ACD} + A_{\Delta ABC}$$

$$= \frac{1}{2}(10)(35) + \frac{1}{2}(18)(35)$$

$$= \boxed{490 \text{ units}^2}$$

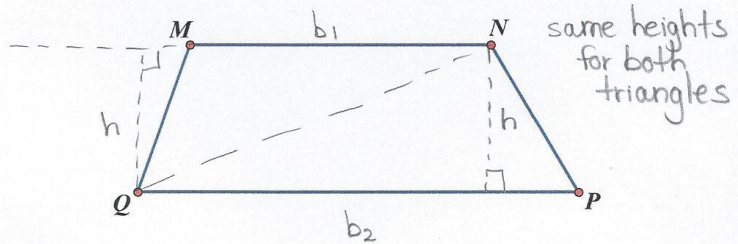
Let's Examine a Trapezoid!

$$A_{MNPQ} = A_{\Delta MNQ} + A_{\Delta NQP}$$

Conclusion:

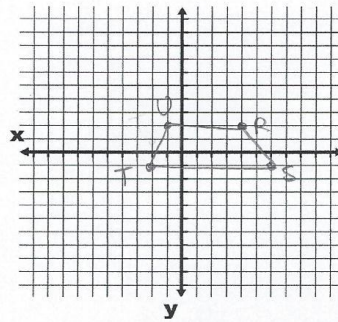
$$A_{MNPQ} = \frac{1}{2} b_1 \cdot h + \frac{1}{2} b_2 \cdot h$$

$$= \frac{1}{2} h (b_1 + b_2)$$



$$\text{Area}_{\text{trapezoid}} = \frac{1}{2} h (b_1 + b_2)$$

Find the area of trapezoid RSTU with vertices R(4, 2), S(6, -1), T(-2, -1), and U(-1, 2)



Bases  $UR = 5$   
 $TS = 8$

Height:  $h = 3$  (count vert dist)

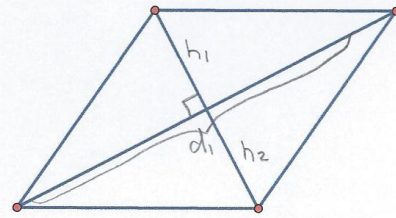
$$A = \frac{1}{2} \cdot 3(5+8)$$

$$= 19.5 \text{ units}^2$$

Let's Explore Rhombi!

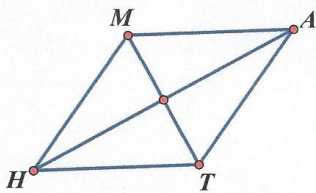
Conclusion:

$$\begin{aligned} \text{Area}_{\text{rhomb}} &= A_{\Delta SMN} + A_{\Delta SRN} \\ &= \frac{1}{2} d_1 \cdot h_1 + \frac{1}{2} d_1 \cdot h_2 \\ &= \frac{1}{2} d_1 (h_1 + h_2) \\ &\text{but } h_1 + h_2 = d_2 \end{aligned}$$



$$\text{So } A_{\text{rhombus}} = \frac{1}{2} d_1 \cdot d_2$$

Rhombus MATH has an area of 64 square inches. Find HA if MT = 8 in.

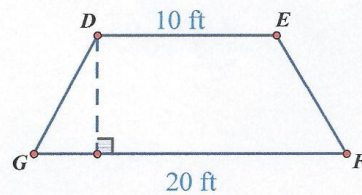


$$64 = \frac{1}{2}(8)(HA)$$

$$64 = 4HA$$

$$HA = 16 \text{ in.}$$

Trapezoid DEFG has an area of 120 square feet. Find the height of DEFG.



$$120 = \frac{1}{2}(10+20) \cdot h$$

$$h = 8 \text{ ft}$$