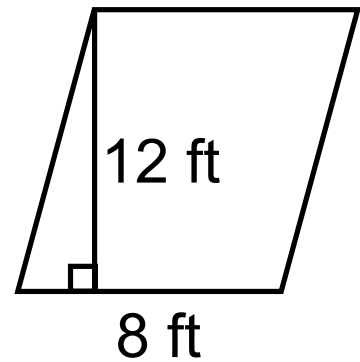


Bellwork
04/10/12

1. Find the area of a parallelogram with height 12 feet and base 8 feet.

$$12 \cdot 8 = 96$$

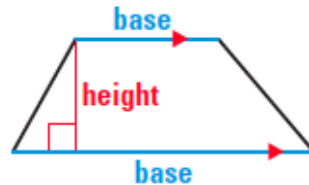
$$A = 96 \text{ ft}^2$$



Geometry
11.2 Area of Trapezoids, Rhombuses, and Kites
Standard(s): 4, 6

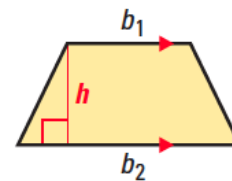
Vocabulary:

Height of a Trap.: The \perp distance between the two bases.

**THEOREM***For Your Notebook***THEOREM 11.4 Area of a Trapezoid**

The area of a trapezoid is one half the product of the height and the sum of the lengths of the bases.

Proof: Ex. 40, p. 736

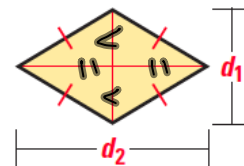


$$A = \frac{1}{2}h(b_1 + b_2)$$

THEOREMS*For Your Notebook***THEOREM 11.5 Area of a Rhombus**

The area of a rhombus is one half the product of the lengths of its diagonals.

Justification: Ex. 39, p. 735

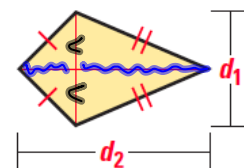


$$A = \frac{1}{2}d_1d_2$$

THEOREM 11.6 Area of a Kite

The area of a kite is one half the product of the lengths of its diagonals.

Proof: Ex. 41, p. 736



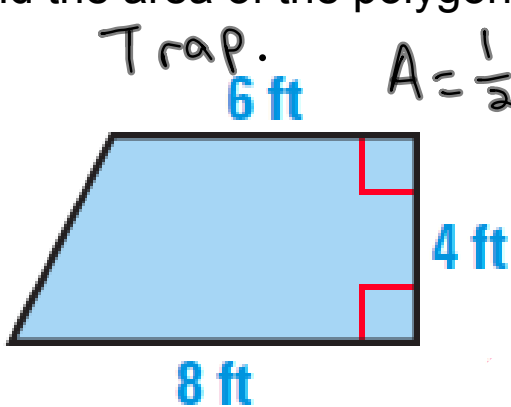
$$A = \frac{1}{2}d_1d_2$$

Remember:

1. A rhombus has all 4 sides \cong .
2. A kite has 2 pairs of \cong sides, but opposite sides are not \cong .

Find Area of Polygons

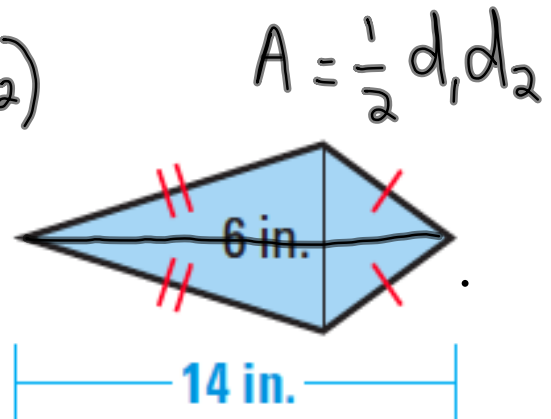
Find the area of the polygon.



$$A = \frac{1}{2}(4)(6 + 8)$$

$$A = 2(14)$$

$$A = 28 \text{ ft}^2$$



$$A = \frac{1}{2}(6)(14)$$

$$A = 3(14)$$

$$A = 42 \text{ in}^2$$

Rhombus

$$d_1 = 80$$

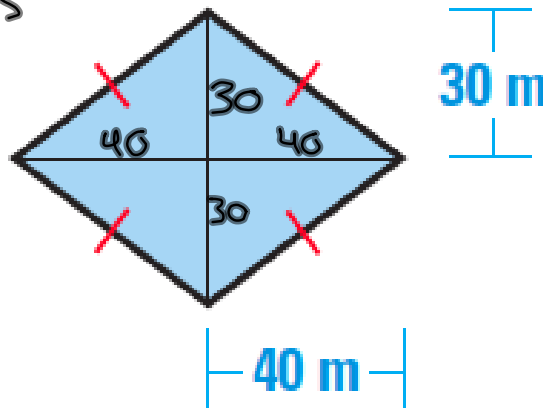
$$d_2 = 60$$

$$A = \frac{1}{2}d_1 d_2$$

$$A = \frac{1}{2}(80)(60)$$

$$A = 40(60)$$

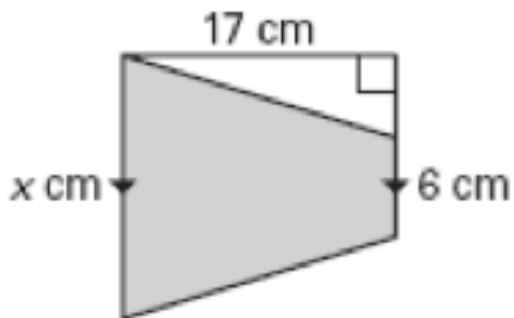
$$A = 2400 \text{ m}^2$$



Missing Lengths

Find the value of x .

Trapezoid
 $A = 187 \text{ cm}^2$



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

$$187 = \frac{1}{2}(17)(6 + x)$$

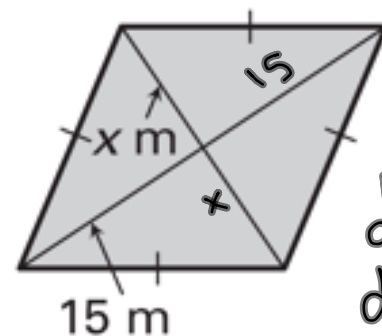
$$187 = 8.5(6 + x)$$

$$187 = 51 + 8.5x$$

$$136 = 8.5x$$

$$x = 16 \text{ cm}$$

Rhombus
 $A = 300 \text{ m}^2$



$$d_1 = 30$$

$$d_2 = 2x$$

$$A = \frac{1}{2}d_1 d_2$$

$$300 = \frac{1}{2}(30)(2x)$$

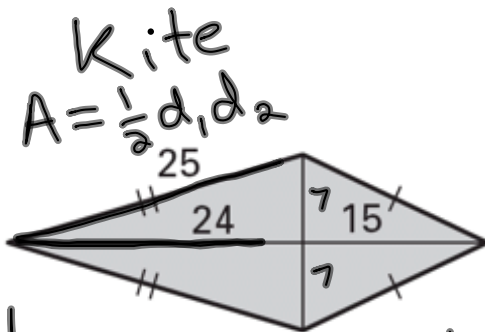
$$300 = 15(2x)$$

$$300 = 30x$$

$$x = 10 \text{ m}$$

Find Area Using Other Info

Find the area of the shaded polygon.



$$d_1 = 24 + 15$$

$$d_2 = 7 + 7$$

$$d_1 = 39$$

$$d_2 = 14$$

$$25^2 = 24^2 + x^2$$

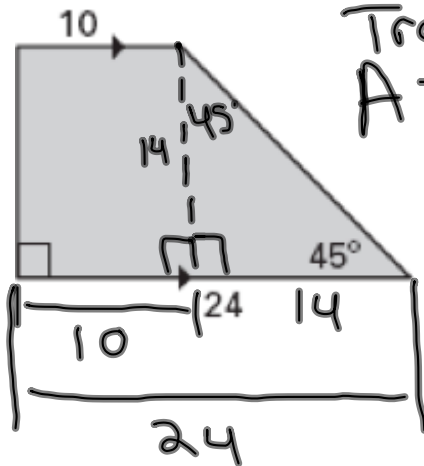
$$x^2 = 49$$

$$x = 7$$

$$A = \frac{1}{2} (14)(39)$$

$$A = 7(39)$$

$$A = 273 \text{ units}^2$$



$$24 - 10 =$$

Trap.

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

$$A = \frac{1}{2} h (10 + 24)$$

$$A = \frac{1}{2} (14)(34)$$

$$A = 7(34)$$

$$A = 238 \text{ units}^2$$

Homework Assignment

Pg. 733-734
#3-14, 16-18, 24-29

