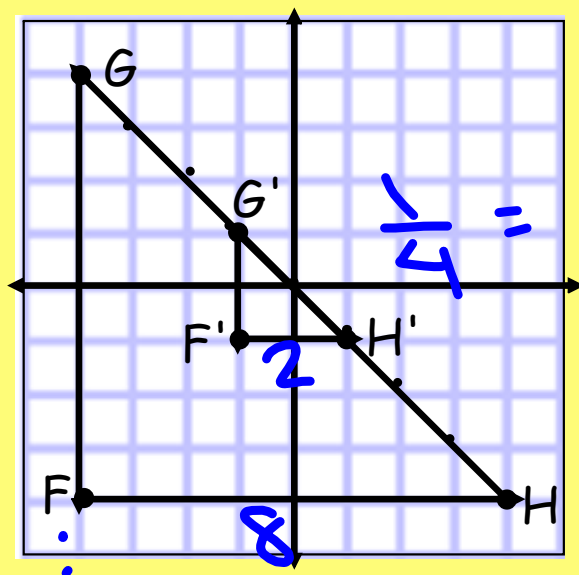
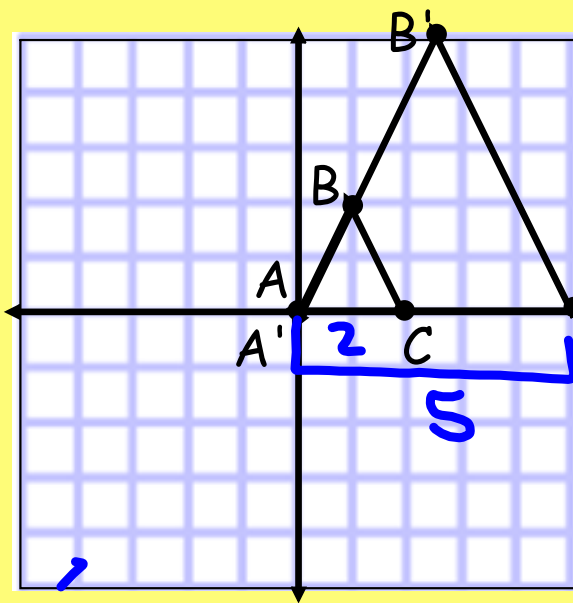


# 3/4/20 - Warm Up Problem

What is the scale factor of each dilation?

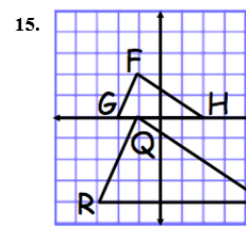
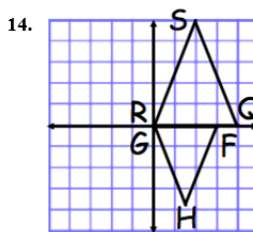
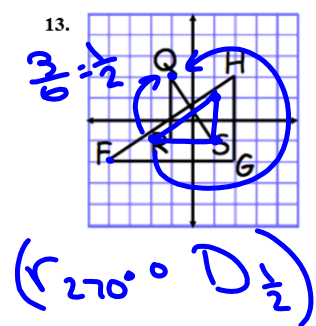
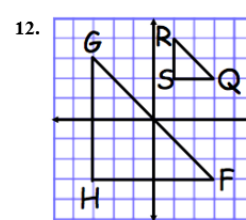
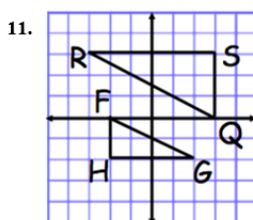
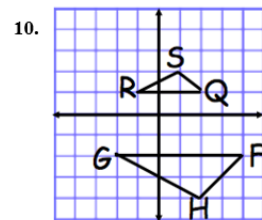


$\frac{2}{1}$



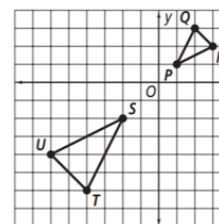
$\frac{5}{2}$

For each graph, write the composition of transformations that maps  $\triangle FGH$  to  $\triangle QRS$  using function notation.

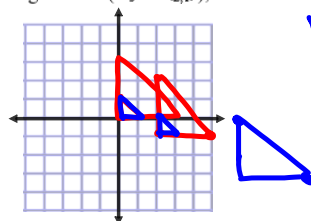


16. Which similarity transformation does not map  $\triangle PQR$  onto  $\triangle STU$ ?

- a.  $(L_{(180^\circ, 0)} \circ D_2)(\triangle PQR)$
- b.  $(D_2 \circ L_{(180^\circ, 0)})(\triangle PQR)$
- c.  $(D_2 \circ R_{x\text{-axis}} \circ R_{y\text{-axis}})(\triangle PQR)$
- d.  $(D_2 \circ R_{x\text{-axis}} \circ T_{(90^\circ, 0)})(\triangle PQR)$

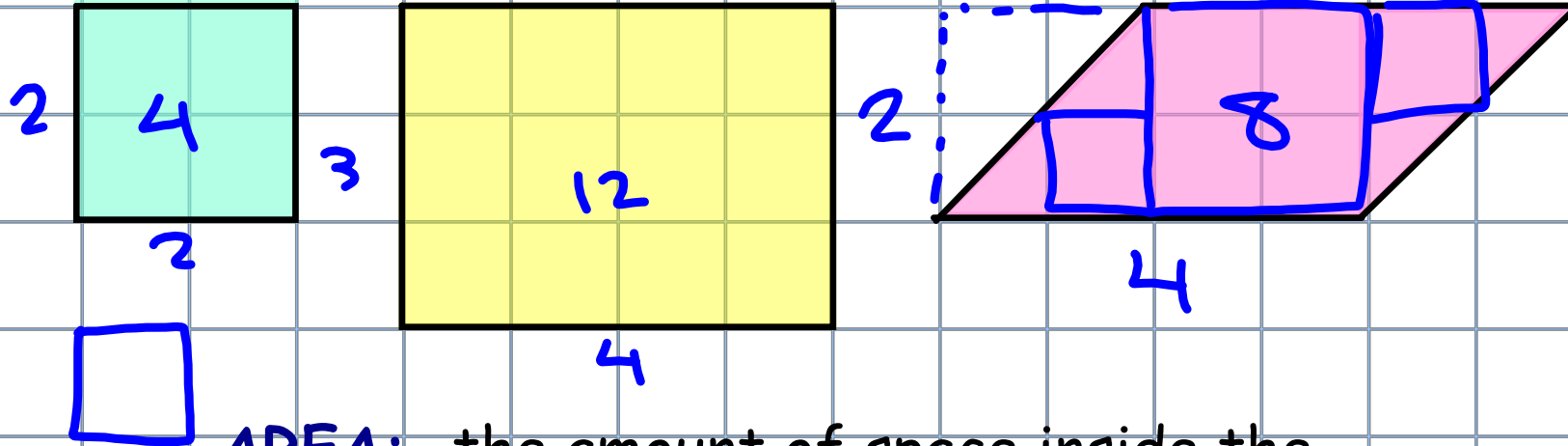


17. The composition  $(T_{\langle 2, 1 \rangle} \circ D_3)$  describes a similarity transformation. If the order of the composition is changed to be  $(D_3 \circ T_{\langle 2, 1 \rangle})$ , does that describe the same transformation? Explain.



No. Shape moves 3x farther away from (0,0) when dilate x3

# What is area?



**AREA:** the amount of space inside the boundary line of a 2D figure

## Concept 23 - Area of Triangles and Quadrilaterals

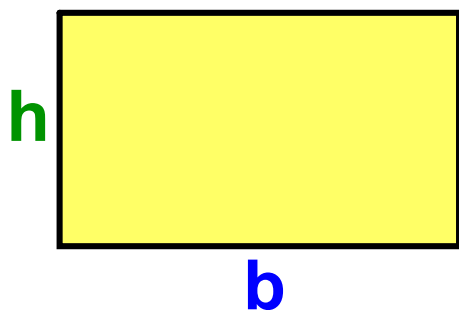
**Goal:** Use formulas to calculate area

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### AREA OF A RECTANGLE

$$A = bh$$

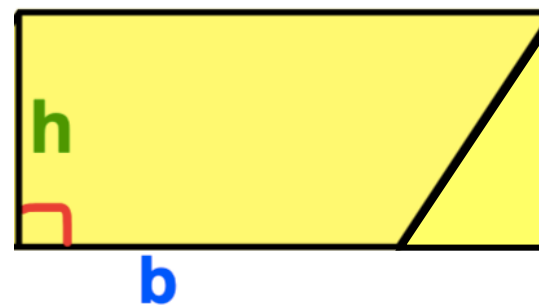
Area = base  $\cdot$  height



### AREA OF A PARALLELOGRAM

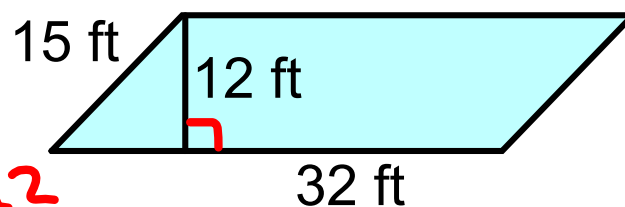
$$A = bh$$

Area = base  $\cdot$  height

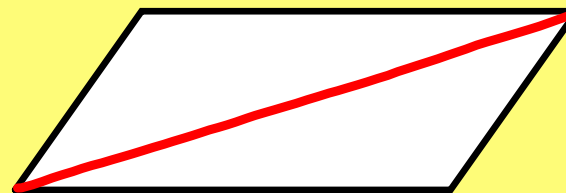
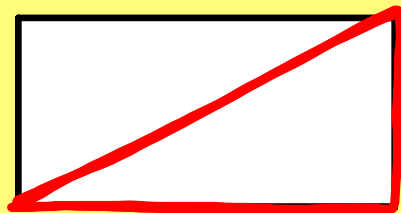


$$A = 32(12)$$

$$A = 384 \text{ ft}^2$$



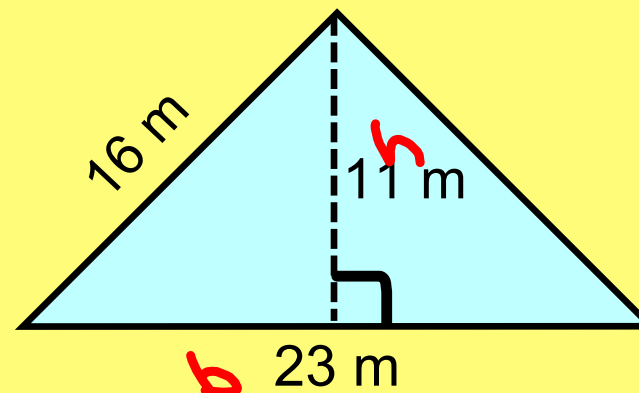
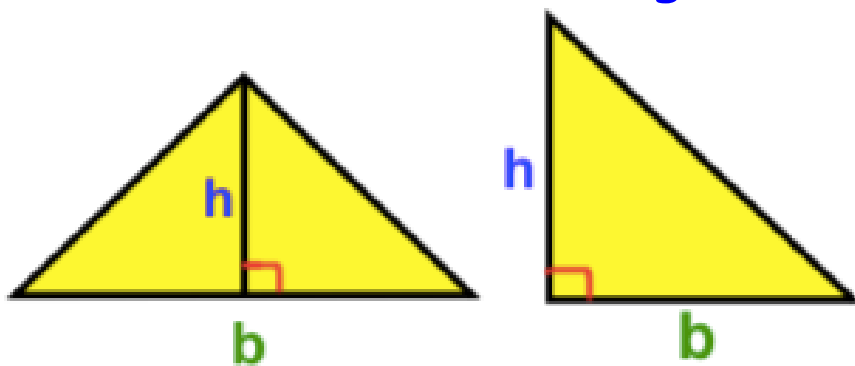
# Finding Area of Triangles



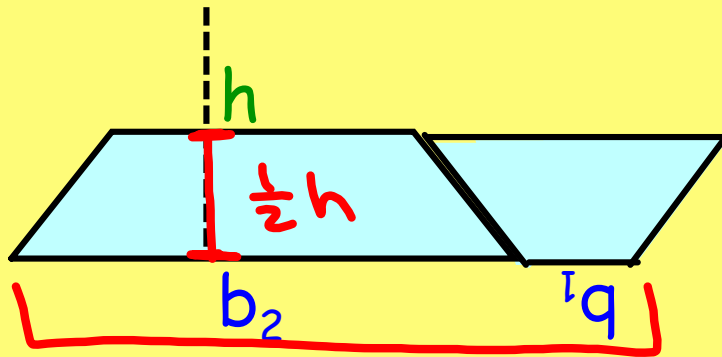
## AREA OF A TRIANGLE

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

$$\text{Area} = \frac{1}{2} \cdot \text{base} \cdot \text{height}$$



$$A = \frac{1}{2}(23)(11)$$
$$A = 126.5 \text{ m}^2$$

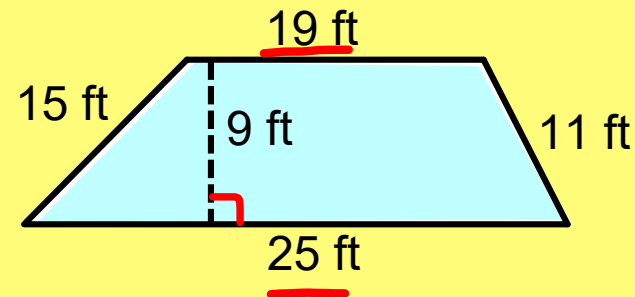
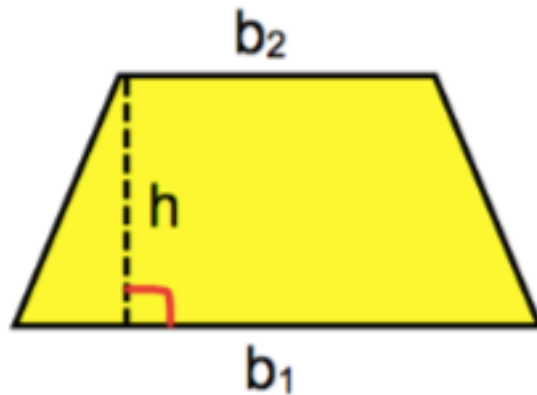
Area of Trapezoids

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

AREA OF A TRAPEZOID

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

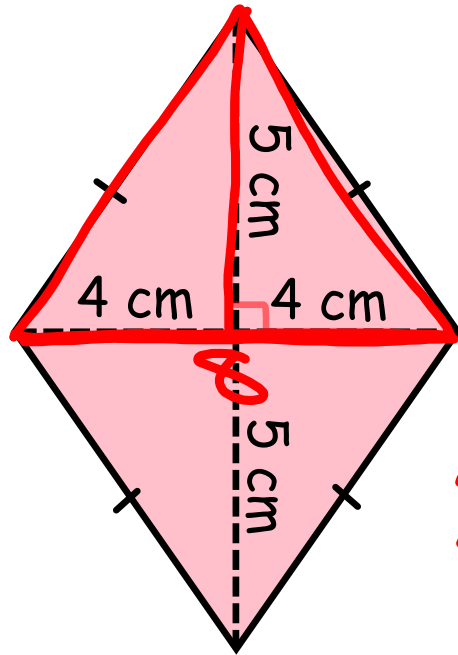
$$\text{Area} = \frac{1}{2} \cdot \text{height} \cdot (\text{base}_1 + \text{base}_2)$$



$$A = \frac{1}{2}(9)(19 + 25)$$

$$A = \frac{1}{2}(9)(44)$$

$$A = 198 \text{ ft}^2$$



What type of quadrilateral is this?

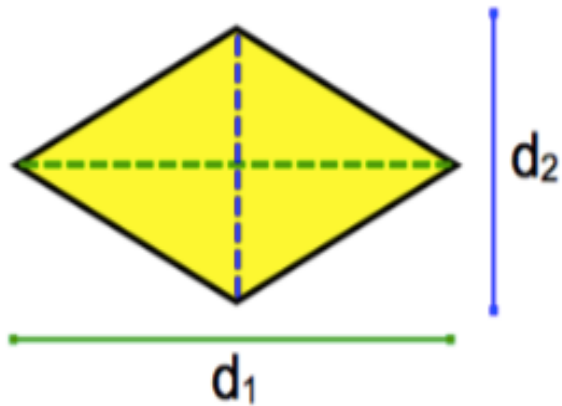
How could you calculate its area using the formulas we already have?

$$2 \cdot \frac{1}{2}(8)(5)$$
$$\frac{1}{2}d_1d_2$$

AREA OF A RHOMBUS OR KITE

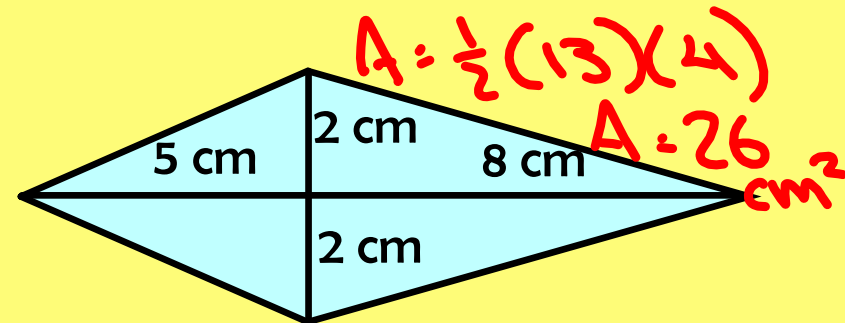
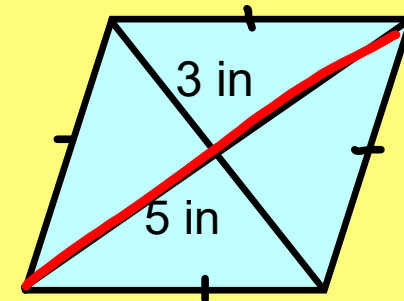
$$A = \frac{1}{2}d_1 \cdot d_2$$

$$\text{Area} = \frac{1}{2} \cdot \text{diagonal}_1 \cdot \text{diagonal}_2$$



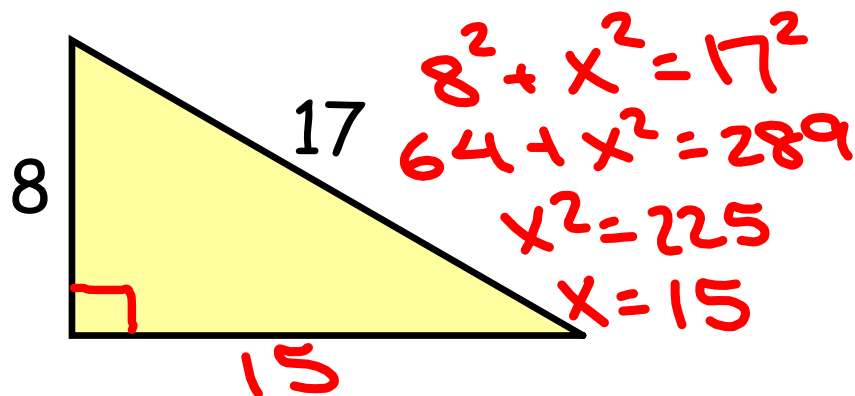
$$\frac{1}{2}(10)(6)$$

$$A = 30 \text{ in}^2$$



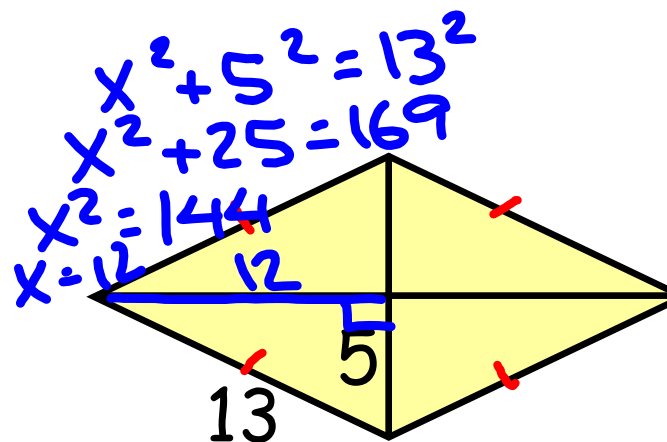


Find the area of each polygon.



$$A = \frac{1}{2}(15)(8)$$

$$A = 60 \text{ units}^2$$



$$\frac{1}{2}(10)(24)$$

$$A = 120 \text{ units}^2$$

Assignment:

Math XL

Concept 23 Assignment