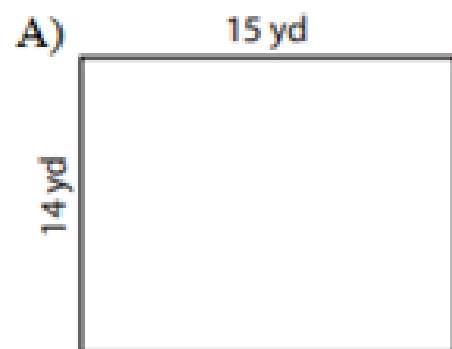


Get out your homework and have it ready to check. Grab a worksheet from the front table and Warm Up on #1 A-F only.

## Classwork - 2D Area Review

1) Find the area and perimeter of the following rectangles and triangles. SHOW WORK AND LABEL

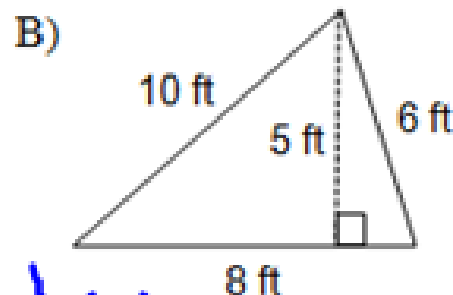


$$A = 14 \cdot 15$$

$$\text{Area} = \underline{210 \text{ yd}^2}$$

$$\text{Perimeter} = \underline{58 \text{ yd}}$$

$$P = 14 + 15 + 14 + 15$$

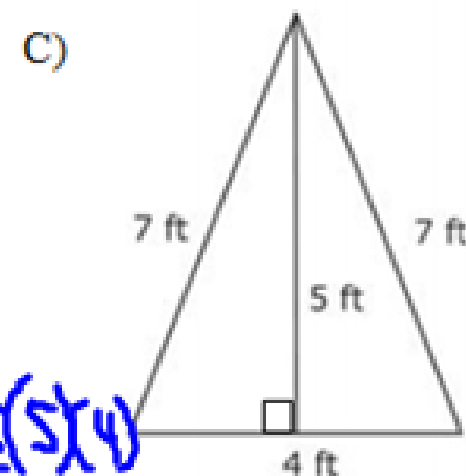


$$A = \frac{1}{2}(5)(8)$$

$$\text{Area} = \underline{20 \text{ ft}^2}$$

$$\text{Perimeter} = \underline{24 \text{ ft}}$$

$$P = 10 + 8 + 6$$

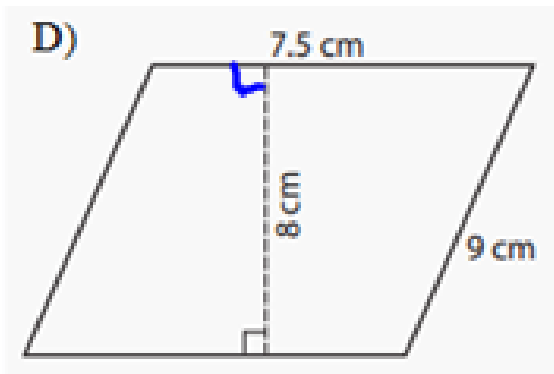


$$A = \frac{1}{2}(5)(4)$$

$$\text{Area} = \underline{10 \text{ ft}^2}$$

$$\text{Perimeter} = \underline{18 \text{ ft}}$$

$$P = 7 + 7 + 4$$

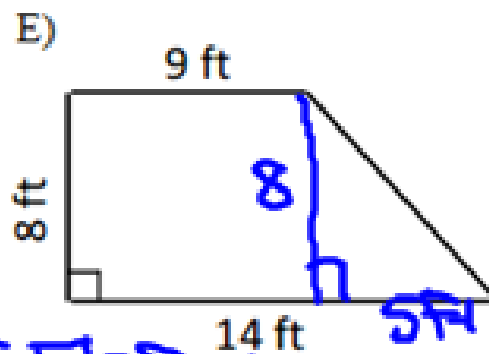


$$A = 7.5(8)$$

$$\text{Area} = \underline{60\text{cm}^2}$$

$$\text{Perimeter} = \underline{33\text{cm}}$$

$$P = 9 + 7.5 + 9 + 7.5$$



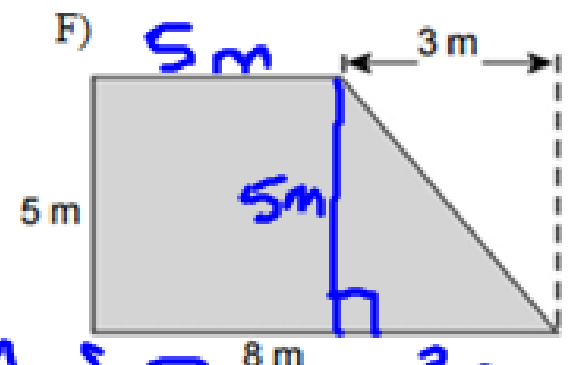
$$A \text{ of } \square = 8 \cdot 9 = 72\text{ft}^2$$

$$A \text{ of } \Delta = \frac{1}{2}(8)(5) = 20\text{ft}^2$$

$$\text{Area} = \underline{92\text{ft}^2}$$

~~$$\text{Perimeter} = \underline{\hspace{2cm}}$$~~

$$A = 72 + 20 = 92$$



$$A \text{ of } \square = 5 \cdot 5 = 25\text{m}^2$$

$$A \text{ of } \Delta = \frac{1}{2}(5)(3) = 7.5\text{m}^2$$

$$\text{Area} = \underline{32.5\text{m}^2}$$

~~$$\text{Perimeter} = \underline{\hspace{2cm}}$$~~

$$A = 25 + 7.5 = 32.5$$

### Area Word Problems

5) A triangular side of the Great Pyramid of Giza has a base that is 230 meters and a height that is 148 meters. What is the area of the side of the pyramid?

$$A = \frac{230 \cdot 148}{2} \rightarrow \frac{34040}{2} = 17020 \text{ m}^2$$

6) This piece of paper is 8.5 inches by 11 inches. What is the area of this piece of paper?

$$8.5(11) = 93.5 \text{ in}^2$$

7) The screen of an iPad has an area of 54 square inches and a length of 6 inches. What is the width of the iPad?

$$A = lw \quad \frac{54}{6} = \frac{6 \cdot w}{6} \quad w = 9 \text{ in}$$

8) Graph the following points.

Point T (2, -5)      Point O (2, 5)      Point Y (6, -5)

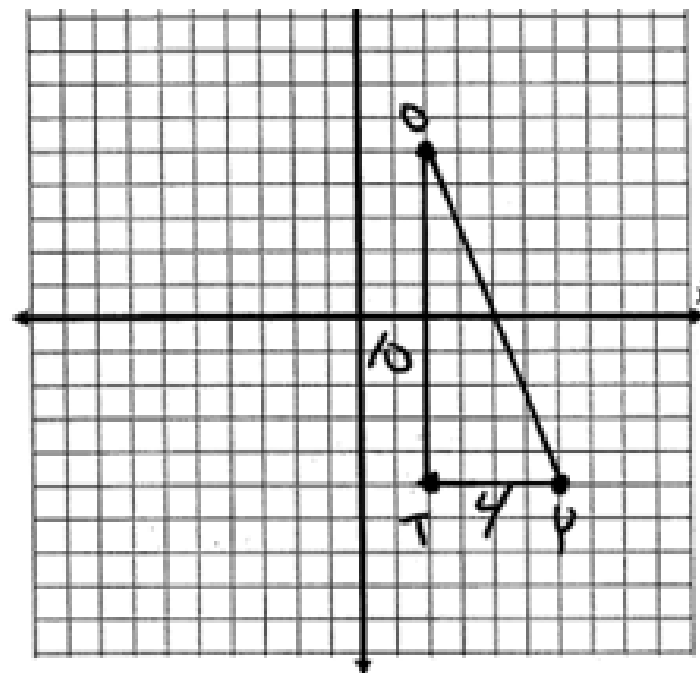
A) If you connect the points, what type of polygon do they form?  
*Be as specific as possible.*

Right Triangle

B) Find the area of polygon that the points formed.

$$A = \frac{1}{2} (10)(4)$$

$$A = 20 \text{ units}^2$$



9) Graph the following points.

Point B (-1, 1)      Point A (-3, 7)      Point T (-5, 1)

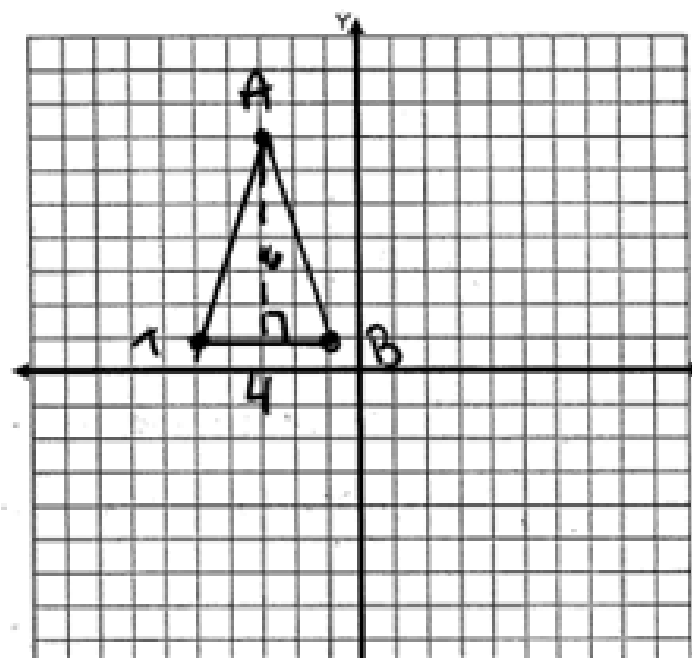
A) If you connect the points, what type of polygon do they form?  
*Be as specific as possible.*

Isosceles or Acute Triangle

B) Find the area of polygon that the points formed.

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

$$A = 12 \text{ units}^2$$



10) Graph the following points.

Point P (7, 1)

Point A (4, -3)

Point R (-1, 1)

Point K (-4, -3)

A) If you connect the points, what type of polygon do they form?

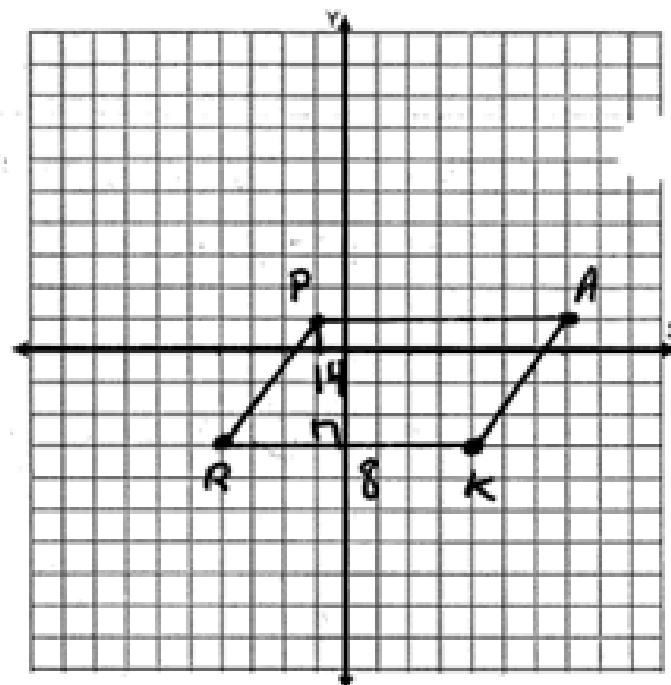
Be as specific as possible. *Quadrilateral isn't specific enough.*

Parallelogram

B) Find the area of polygon that the points formed.

$$A = 4 \cdot 8$$

$$A = 32 \text{ units}^2$$



11) Graph the following points.

Point F (-3, 6)

Point A (2, 6)

Point R (2, 2)

Point T (-3, 2)

A) If you connect the points, what type of polygon do they form?

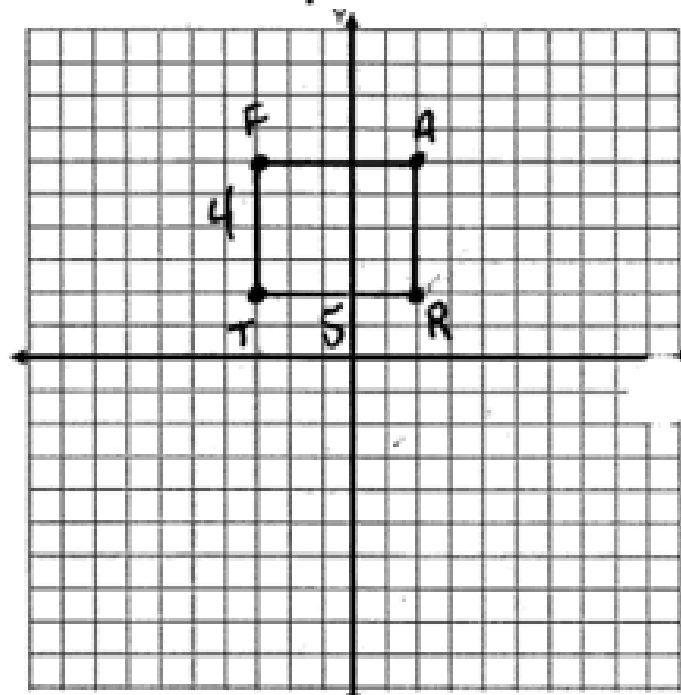
Be as specific as possible. *Quadrilateral isn't specific enough.*

Rectangle

B) Find the area of polygon that the points formed.

$$A = 4 \cdot 5$$

$$A = 20 \text{ units}^2$$



12) Graph the following points.

Point M (-1, -3)      Point J (-1, 1)

Point B (-5, 1)      Point K (-8, -3)

A) If you connect the points, what type of polygon do they form?  
*Be as specific as possible. Quadrilateral isn't specific enough.*

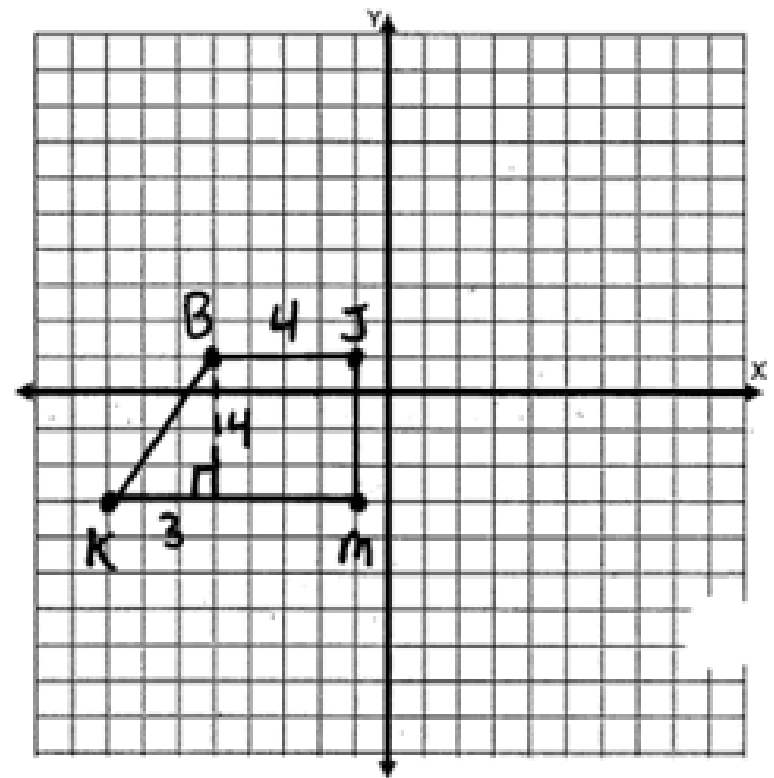
Trapezoid

B) Find the area of polygon that the points formed.

$$A \text{ of } \square = 4 \cdot 4 = 16 \text{ units}^2$$

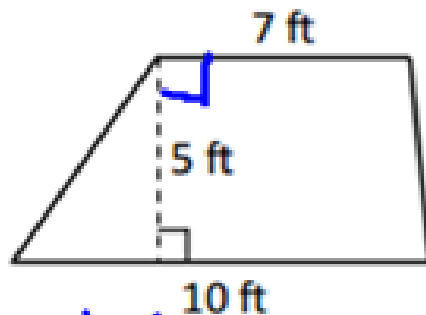
$$A \text{ of } \triangle = \frac{1}{2} \cdot 4 \cdot 3 = 6 \text{ units}^2$$

$$\text{Area} = 22 \text{ units}^2$$



## Finding the Area of Trapezoids Using Formula

Example:



$$A = \frac{1}{2}(10 + 7) \cdot 5$$

$$A = \frac{1}{2}(17)(5)$$

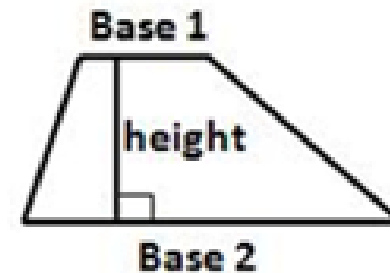
Area = 42.5 ft<sup>2</sup>

## FORMULA TO FIND AREA OF A TRAPEZOID

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

OR

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



$$\text{Area of a Trapezoid} = \frac{h(b_1 + b_2)}{2} \text{ units}^2;$$

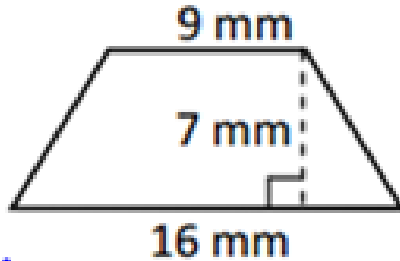
where  $h = \text{height}$ ,

$b_1 = \text{length of base 1}$ ,

$b_2 = \text{length of base 2}$ .

2) Find the area of the following trapezoids using the formula. SHOW WORK AND LABEL

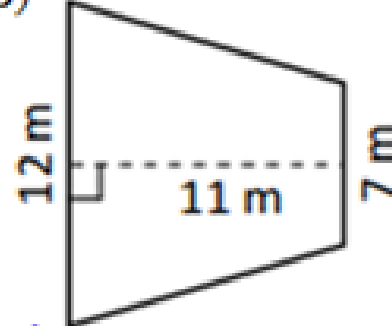
A)



$$A = \frac{1}{2}(16 + 9) \cdot 7$$
$$= \frac{1}{2}(25)(7)$$

Area = 87.5 mm<sup>2</sup>

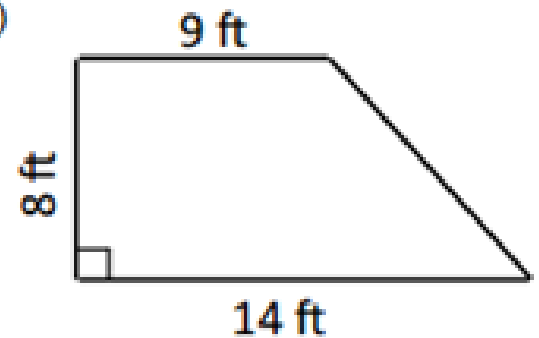
B)



$$A = \frac{1}{2}(12 + 7) \cdot 11$$

Area = 104.5 m<sup>2</sup>

C)

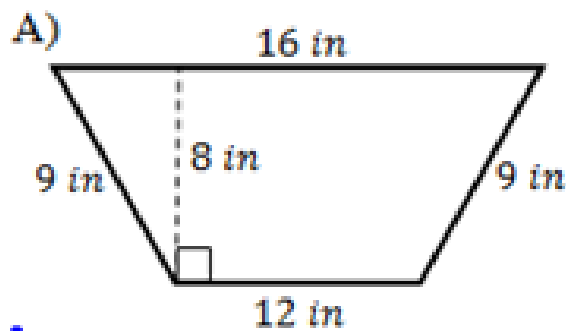


$$A = \frac{1}{2}(9 + 14) \cdot 8$$

Area = 92 ft<sup>2</sup>



3) Find the area of the following trapezoids using the formula. SHOW WORK AND LABEL



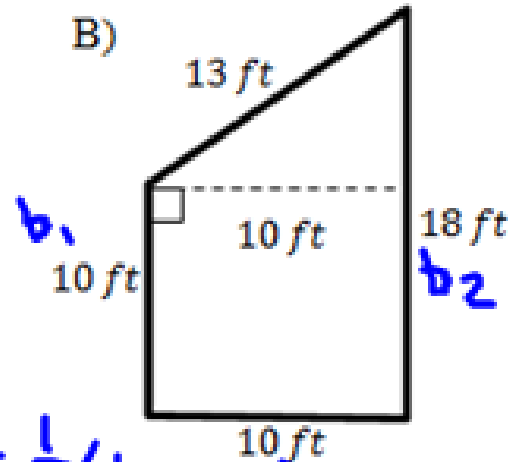
$$A = \frac{1}{2}(16 + 12) \cdot 8$$

$$= \frac{1}{2}(28) \cdot 8$$

$$P = 9 + 12 + 9 + 16$$

Area = 112 in<sup>2</sup>

Perimeter = 46 in

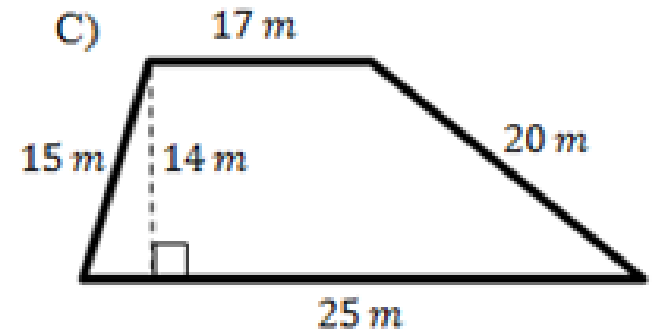


$$A = \frac{1}{2}(10 + 18) \cdot 10$$

$$P = 10 + 10 + 18 + 13$$

Area = 140 ft<sup>2</sup>

Perimeter = 51 ft



$$A = \frac{1}{2}(17 + 25) \cdot 14$$

$$P = 15 + 25 + 20 + 17$$

Area = 294 m<sup>2</sup>

Perimeter = 77 m

4) The area of a tile floor is 280 square feet and has a width of 14 feet. What is the length of the floor?

$$A = lw$$

$$A = 280 \text{ ft}^2$$
$$w = 14 \text{ ft}$$

$$280 = l \cdot 14$$
$$\div 4 \quad \div 14$$

$$l = 20 \text{ ft}$$

5) A triangle has a base of 8 inches and an area of 52 square inches. What is the height of the triangle?

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

$$b = 8 \text{ in}$$
$$A = 52 \text{ in}^2$$

$$52 = \frac{1}{2} \cdot 8 \cdot h$$

$$52 = 4 \cdot h$$
$$\div 4 \quad \div 4$$

$$h = 13 \text{ inches}$$