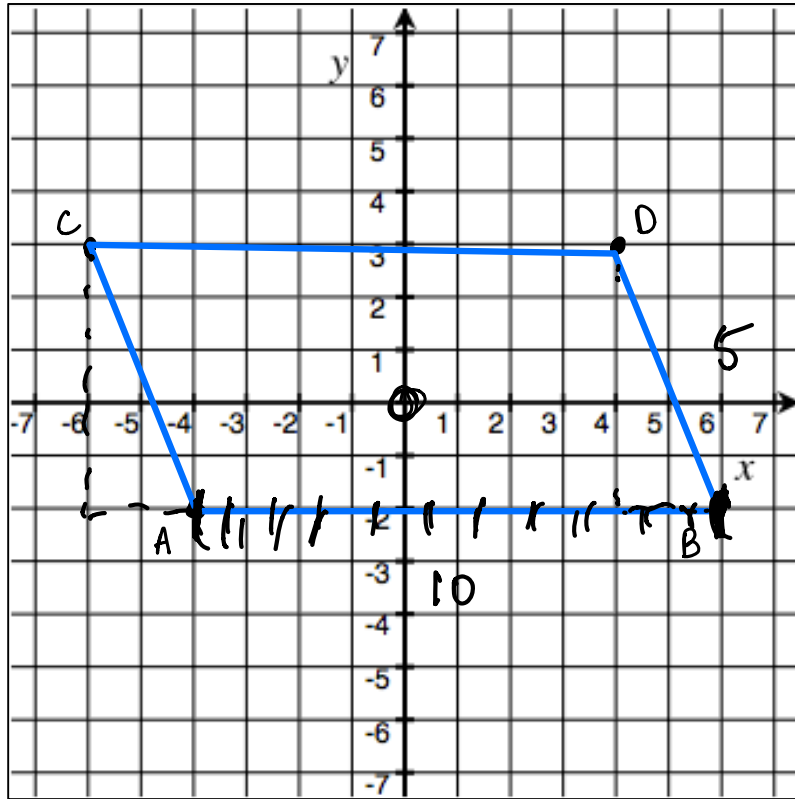


**LEARNING OBJECTIVE:** we will use a coordinate plane and find the area of different shapes. (G7M3L19)

**ACTIVATING PRIOR KNOWLEDGE**

We can identify points on the coordinate plane.



Find the following points and label them:

A  $(-4, -2)$

B  $(6, -2)$

C  $(-6, 3)$

D  $(4, 3)$

$A = 10 \times 5 = 50 \text{ un.}^2$

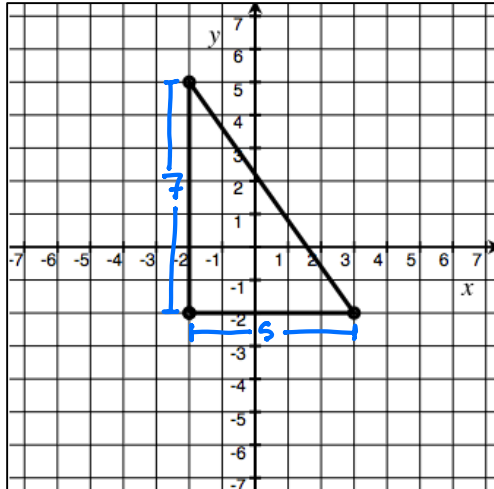
**CONCEPT DEVELOPMENT**

Important area formulas to remember:

Triangle	Rectangle	Parallelogram	Trapezoid
$A = \frac{1}{2} \text{ base} \times \text{height}$	$A = \text{length} \times \text{width}$	$A = \text{base} \times \text{height}$	$A = \frac{1}{2} (b_1 + b_2) \times h$

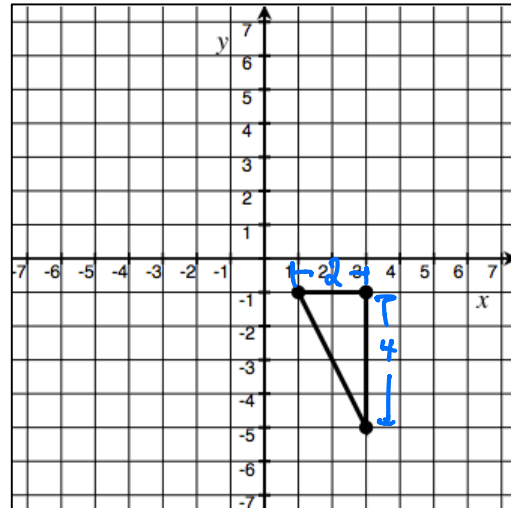
**GUIDED PRACTICE****Steps for Finding the Areas of Shapes on a Coordinate Plane**

1. If necessary, deconstruct the figure into shapes with known area formulas, or make the figure a part of a larger shape and subtract areas.
2. Use area formulas on page 1 and the scale of the coordinate plane to find area of shape.



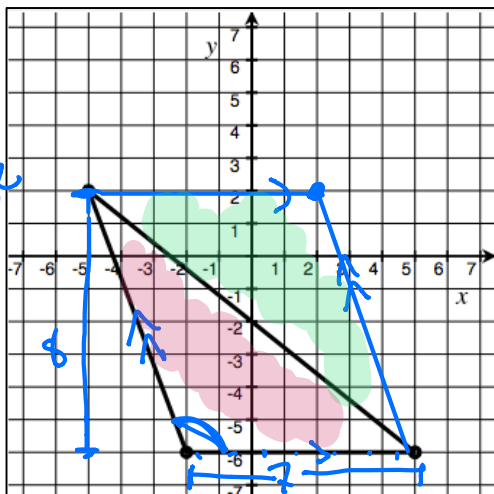
$$A = \frac{b \cdot h}{2} \text{ or } \frac{1}{2} b \cdot h$$

$$= \frac{5 \cdot 7}{2} = \frac{35}{2} = 17.5 \text{ sq. un.}$$



$$A = \frac{1}{2} 2 \cdot 4$$

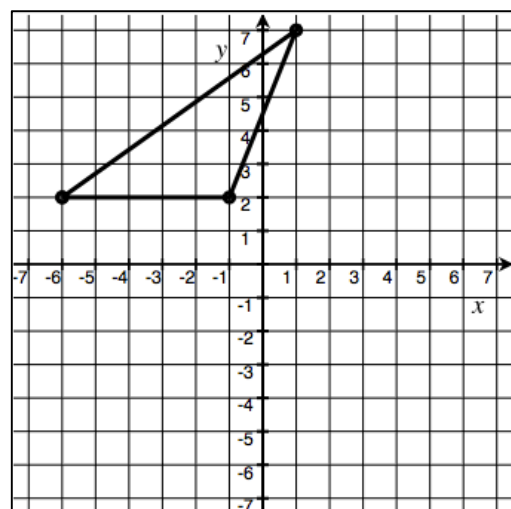
$$= 1 \cdot 4 = 4 \text{ un.}^2$$



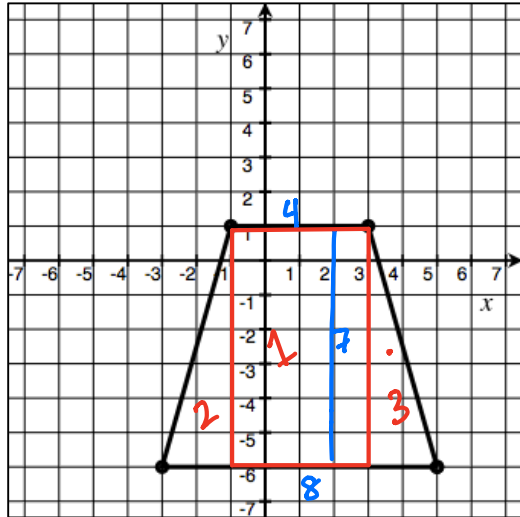
$$\frac{1}{2} b \cdot h$$

$$\frac{1}{2} 7 \cdot 8 = 28 \text{ un.}^2$$

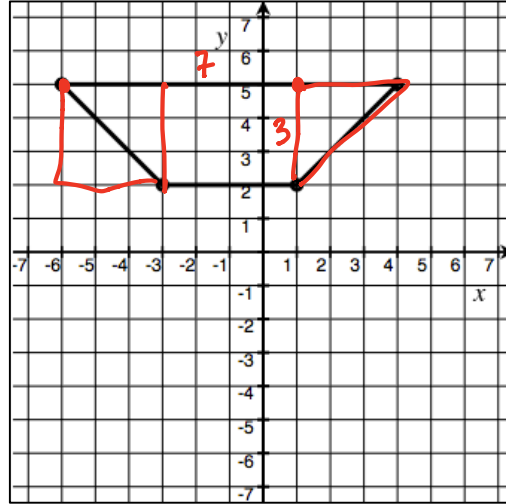
$$28 \text{ sq. un.}$$



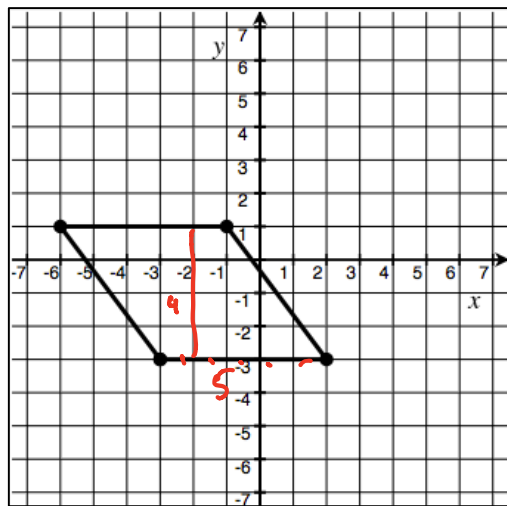
$$\frac{1}{2} \cdot 5 \cdot 5 = 12.5 \text{ un.}^2$$



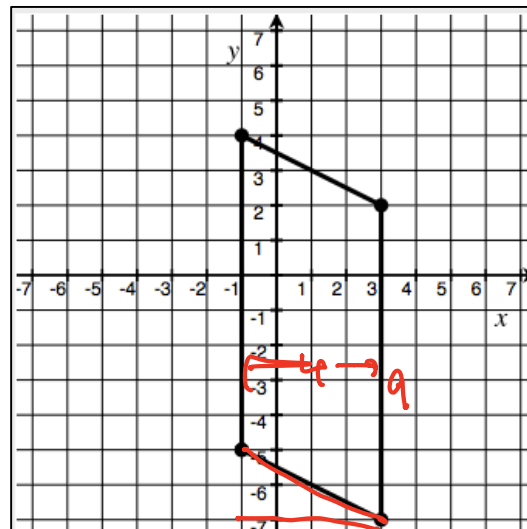
$$\begin{aligned} \rightarrow A &= \frac{1}{2}(b_1 + b_2)h \\ A &= \frac{1}{2}(4 + 8) \cdot 7 \\ &= \frac{1}{2}(12) \cdot 7 \\ &= 42 \text{ un.}^2 \end{aligned}$$



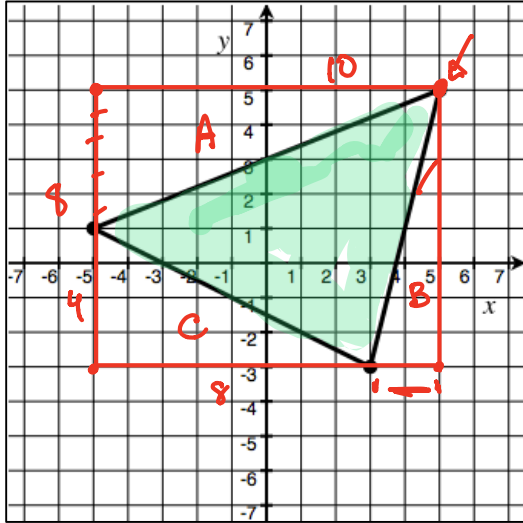
$$A = 21 \text{ un.}^2$$



$$\begin{aligned} A &= b \cdot h \\ 5 \cdot 4 &= 20 \text{ un.}^2 \end{aligned}$$



$$A = 9 \cdot 4 = 36 \text{ un.}^2$$



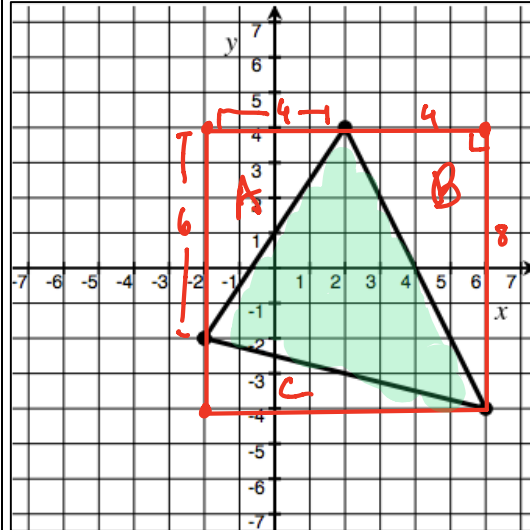
$$A_{\text{rect}} = 8 \times 10 = 80$$

$$A = \frac{1}{2}(10 \cdot 4) = 20$$

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

$$C = \frac{1}{2}(4 \cdot 8) = 16$$

$$80 - (20 + 8 + 16) = 36 \text{ sq. un.}$$



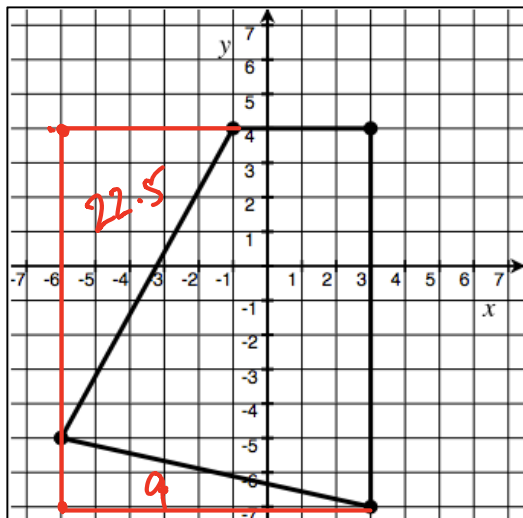
$$A_{\text{square}} = 64$$

$$A = \frac{1}{2}(6 \cdot 4) = 12$$

$$B = \frac{1}{2}(4 \cdot 8) = 16$$

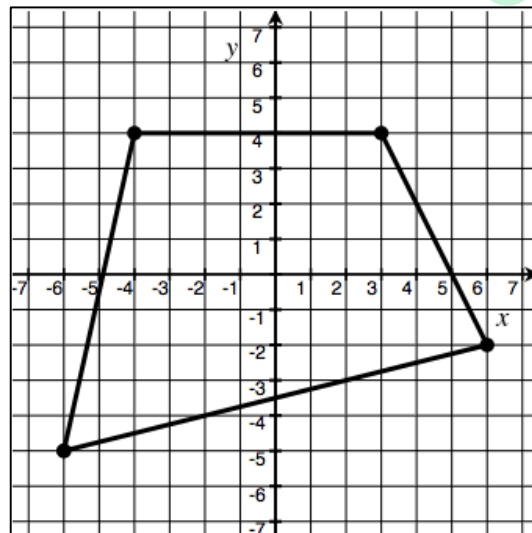
$$C = \frac{1}{2}(2 \cdot 8) = 8$$

$$64 - (12 + 16 + 8) = 28 \text{ sq. un.}$$



$$A = 67.5 \text{ sq. un.}$$

$$99 - (22.5 + 9) = 99 - 31.5 = 67.5$$



$$A = 72 \text{ un. sq}$$

Name: \_\_\_\_\_

Math 7.1

Mr. Rogove

Date: \_\_\_\_\_

## **INDEPENDENT PRACTICE**

Students can complete problem set for independent practice.

## **CLOSURE**

## **NOTES**

This corresponds to lesson 19 from Module 3, Grade 7.

Homework is Khan: Areas of Shapes on Grids and Area of Composite Shapes from “geometry”