

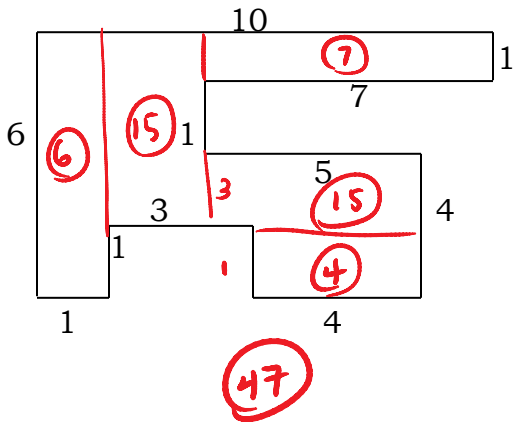
# 11.1 - Understanding Area

What we already know!----

Area of a rectangle:  $lw$   
Area of a square:  $lw$

Perimeter: *distance around*  
Semiperimeter:  $\frac{1}{2}$  (perimeter)

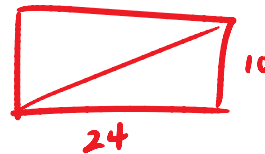
1) Find the area of the figure below.



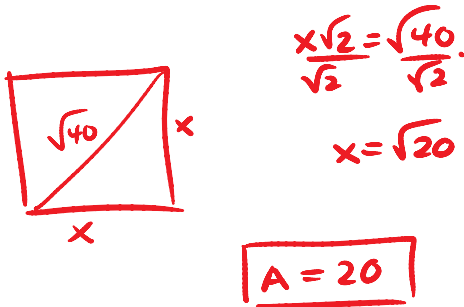
2) What is the length of a rectangle that has an area of 240 and height of 10?

24

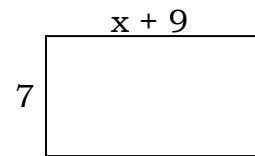
What is the length of the diagonal? 26



3) If the diagonal of a square is  $\sqrt{40}$  what is the area?



4) The area of the rectangle is between 98 and 133 square feet. What restrictions does this place on x?



$$98 < 7(x+9) < 133$$

$$98 < 7x + 63 < 133$$

$$35 < 7x < 70$$

$$5 < x < 10$$

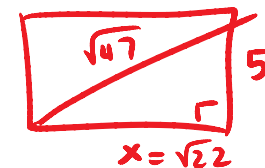
5. The diagonal of rectangle is  $\sqrt{47}$  and the rectangle's height is 5.

a. Find the area of the rectangle

$$5^2 + x^2 = (\sqrt{47})^2$$

$$25 + x^2 = 47$$

$$x^2 = 22$$

$$x = \sqrt{22}$$


b. Find the semiperimeter

$$\frac{10 + 2\sqrt{22}}{2} = 5 + \sqrt{22}$$

# 11.2 - Area of triangles and parallelograms

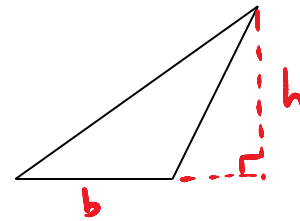
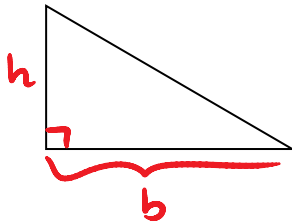
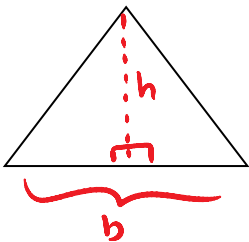
Area of a triangle:  $\frac{1}{2}bh$



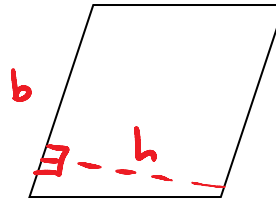
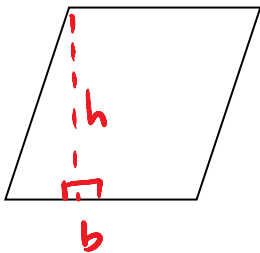
Area of a parallelogram:  $bh$



Recognizing BASE and HEIGHT of a triangle:



Recognizing BASE and HEIGHT of a parallelogram

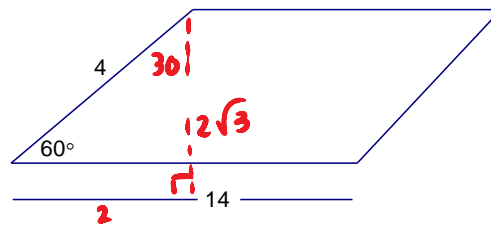


Let's try a few problems!

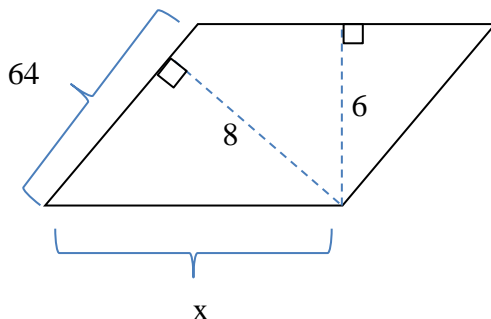
1) Find the area of the parallelogram

$$A = 14 \cdot 2\sqrt{3}$$

$$= \boxed{28\sqrt{3}}$$



2) Find x



$$A = 64 \cdot 8$$

$$A = 512$$

$$A = bh$$

$$512 = x \cdot 6$$

$$x = \frac{256}{3} \approx 85.3$$