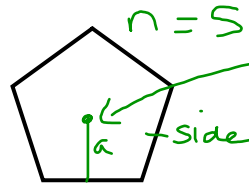


LESSON # 43 ~ Area of a Regular Polygon

Textbook 173 and 174



Apothem ~ the line from the center to the middle of one side. (not corner)

Side length s

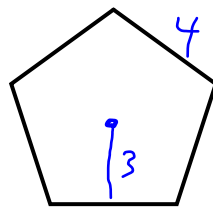
Number of sides n

Formula used to calculate the area :

$$A = \frac{s \times a \times n}{2} \quad \text{or} \quad \frac{sn(a)}{2}$$

Same

Example 1: Pentagon with side length of 4cm and apothem of 3cm.



$$A = \frac{San}{2}$$

$$A = \frac{4(3)(5)}{2} \quad A = 30\text{cm}^2$$

Example 2: Find the length of the side of a regular hexagon with the area 48cm² and apothem 8cm.

Side ?
 $n = 6$
 $A = 48$
 $a = 8$

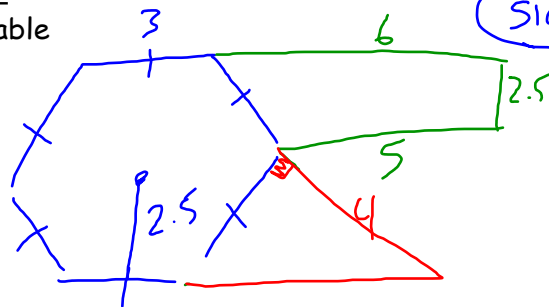
$$A = \frac{San}{2}$$

$$48 = \frac{S(8)(6)}{2}$$

$$48 = \frac{48 \text{ Side}}{2}$$

side = 2

Example 3:
 Decomposable



$$\text{Area?} = \frac{San}{2} + \frac{b(h)}{2} + \frac{h(B+b)}{2}$$