

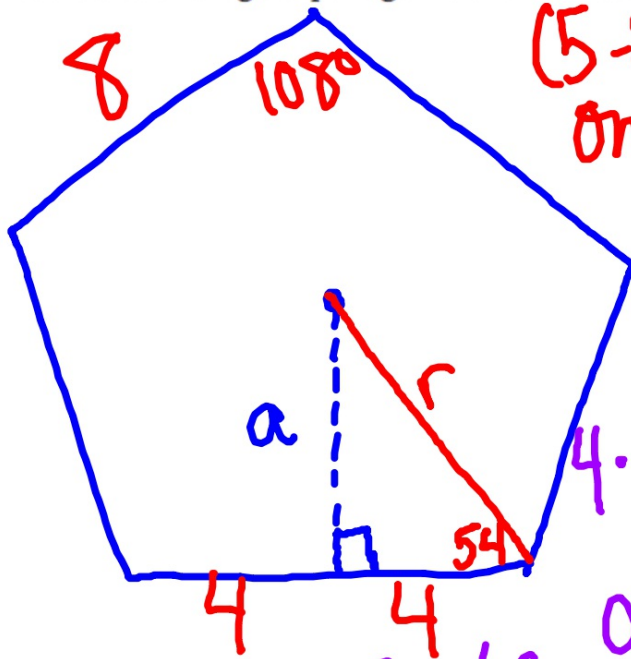
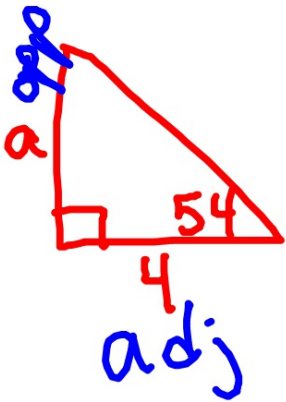
Area of a regular polygon:

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

a = apothem
 p = perimeter

Example 1:

Find the area of a regular pentagon with 8-cm sides. Round to the nearest tenth.



$$(5-2) \cdot 180 = 540$$

$$\text{one angle} = 540/5$$

$$= 108$$

$$108 \div 2 = 54^\circ$$

$$4 \cdot \tan 54 = \frac{a}{4} \cdot 4$$

$$a = 4 \tan 54 = 5.5055$$

$$A = \frac{1}{2}(5.5055)(8 \cdot 5) = \boxed{110.1 \text{ cm}^2}$$