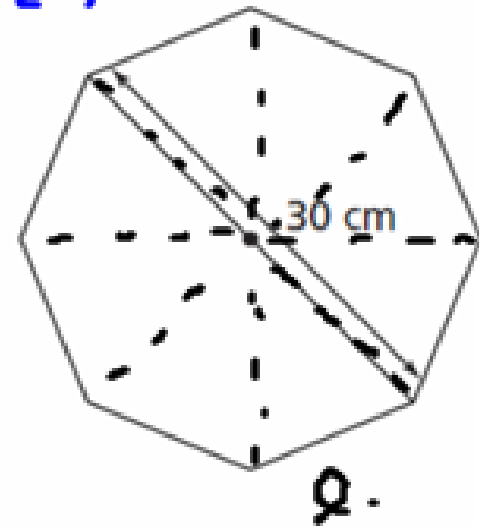


Things to know:

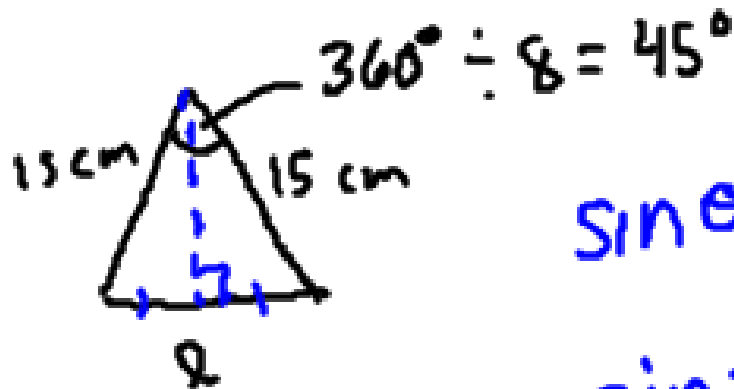
- ① Solve the triangle
 - all missing sides & angles
- ② Dimensions rectangle
 - length & width
- ③ Word Problems
 - ** know how to draw **

Area: $8\left(\frac{bh}{2}\right)$

A small table has the shape of a regular octagon. The distance from one vertex to the opposite vertex, measured through the centre of the table, is approximately 30 cm. There is a strip of wood veneer around the edge of the table. What is the length of this veneer to the nearest centimetre?



$P = 8Q$



$\sin \theta = \frac{O}{H}$

$\sin 22.5 = \frac{O}{15}$

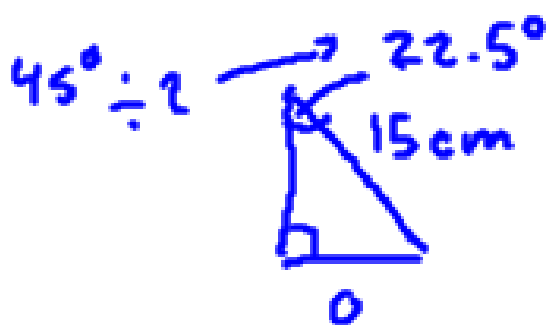
$O = 5.74025 \text{ cm.}$

$Q = 2(5.74025)$
 $Q = 11.4805 \text{ cm}$

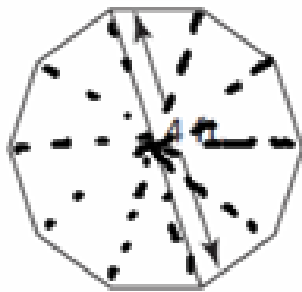
$P = 8(11.4805)$

$P = 91.84 \text{ cm}$

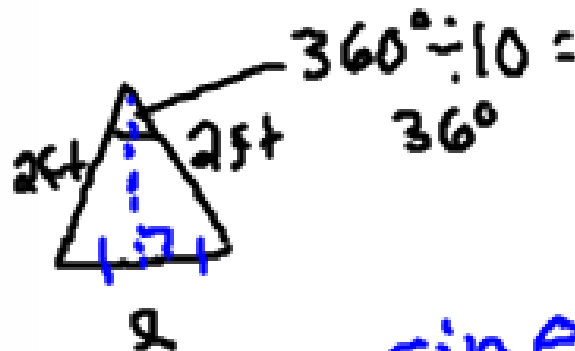
$P = 92 \text{ cm}$



3. A window has the shape of a regular decagon. The distance from one vertex to the opposite vertex, measured through the centre of the window, is approximately 4 ft. Determine the length of the wood moulding material that forms the frame of the window, to the nearest foot.



$$P = 10s$$



$$\sin \theta = \frac{O}{H}$$

$$\sin 18 = \frac{O}{2s}$$

$$O = 0.61803s$$

$$s = 2(0.61803) = 1.23606 \text{ ft.}$$

$$P = 10(1.23606) = 12.36 \text{ ft}$$

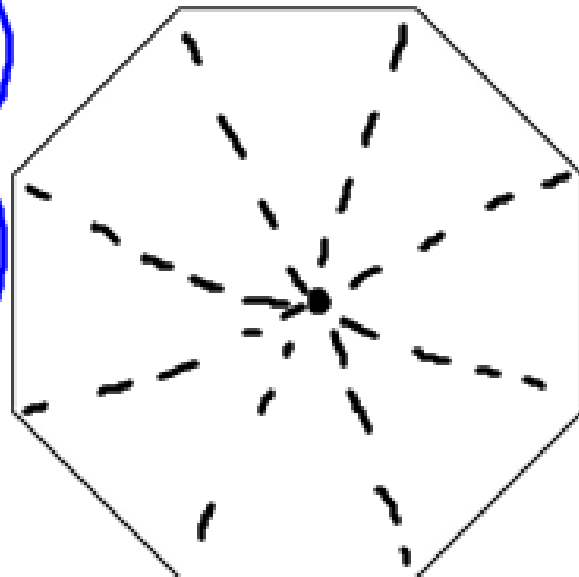
$$P = 12 \text{ ft.}$$

Area of octagon with side length 6 cm

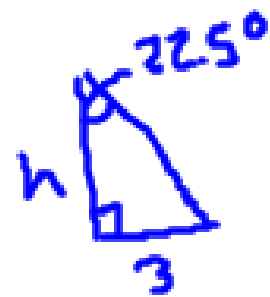
$$\text{Area} = 8 \left(\frac{bh}{2} \right)$$

$$= 8 \left(\frac{6 \cdot 7.2426}{2} \right)$$

$$= 173.8 \text{ cm}^2$$



$$b = 6 \text{ cm}$$



$$\tan \theta = \frac{O}{A}$$

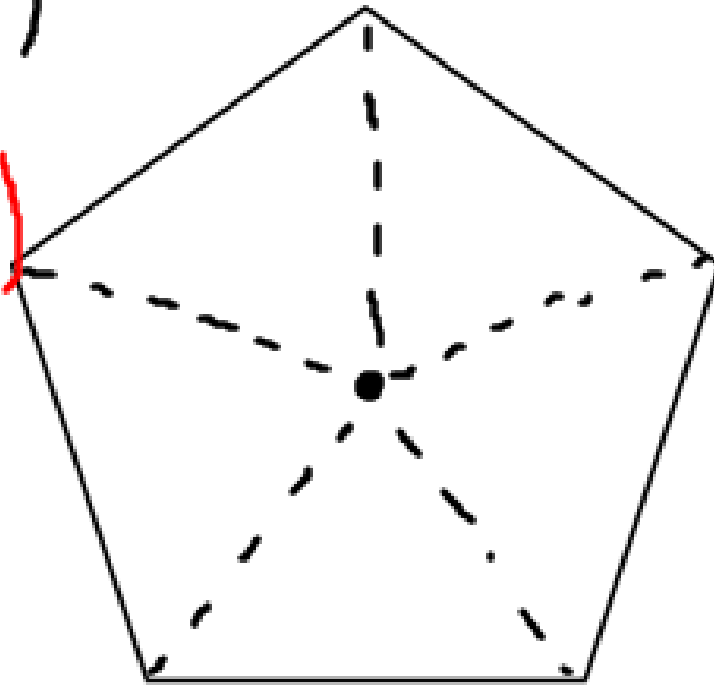
$$\tan 22.5 = \frac{3}{h}$$

$$h = 7.2426 \text{ cm}$$

$$\text{Area} = 5 \left(\frac{bh}{2} \right)$$

$$= 5 \left(\frac{7 \cdot 4.8173}{2} \right)$$

$$= 84.3 \text{ in}^2$$



$$b = 7 \text{ in}$$



$$\tan \theta = \frac{O}{A}$$

$$\tan 36 = \frac{3.5}{h}$$

$$h = 4.8173 \text{ in}$$