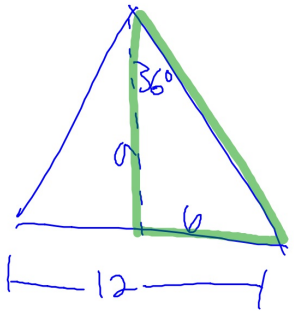
Bellwork Monday, May 12, 2014

Find the area of each regular polygon to the nearest hundredth.

$\frac{1}{2} a p = \frac{1}{2}(8.25)(60) = 248.7 \text{ cm}^2$

1. Regular Pentagon whose sides are 12cm long.



$p = 12\text{cm} \times 5$

$= 60$

$\text{Tan } 36° = \frac{6}{a}$

$a = 8.25$

2. Regular 18-gon whose radius is 30cm long. SOHCAHTOA

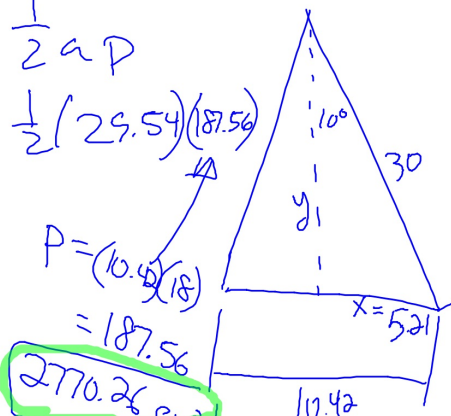
$\frac{1}{2} a p$

$\frac{1}{2}(29.54)(187.56)$

$P = (10.42)(18)$

$= 187.56$

2770.26 cm²



for y

$\cos 10° = \frac{y}{30}$

$y = 29.54$

for x

$\sin 10 = \frac{x}{30}$

$x = 5.21$

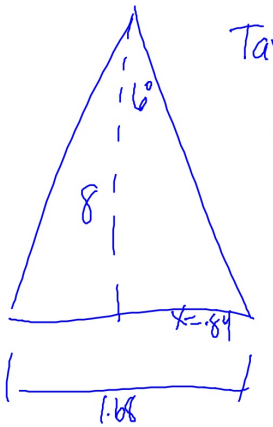
3. Regular 30-gon whose apothem is 8 in. long.

$\frac{1}{2}(8)(50.45)$

$P = 30(1.68)$

$= 50.45$

201.6 in²



$\text{Tan } 6° = \frac{x}{8}$

$x = .84$