

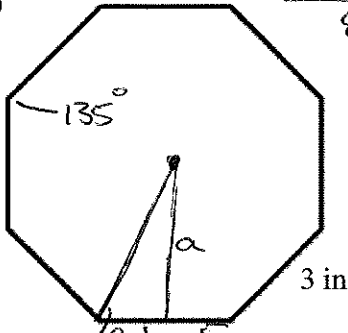
GEOMETRY  
Area (apothem) worksheet

Name \_\_\_\_\_

Date \_\_\_\_\_ HR \_\_\_\_\_

Find the area of each regular polygon. SHOW ALL WORK!!!

1)  $\frac{(8-2)180}{8}$

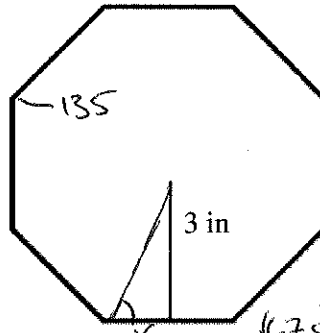


$67.5^\circ$   
 $P = 24$

$\tan 67.5 = \frac{a}{1.5}$   $a = 3.62$

$8(3.62 \cdot 1.5)$  Area = 43.44 in<sup>2</sup>

2)

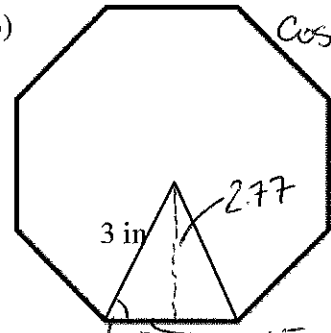


$\tan(67.5) = \frac{3}{x}$   
 $P = 19.84$   $x = 1.24$

$a = 3$

Area = 29.76 in<sup>2</sup>

3)



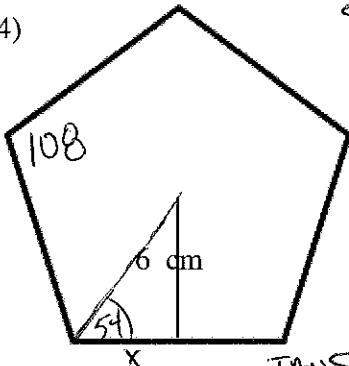
$67.5^\circ$   $1.15$   
 $P = 18.4$

$a = 2.77$

Area = 25.48

$\sin 67.5 = \frac{a}{3}$   
 $\cos 67.5 = \frac{1.15}{3}$

4)



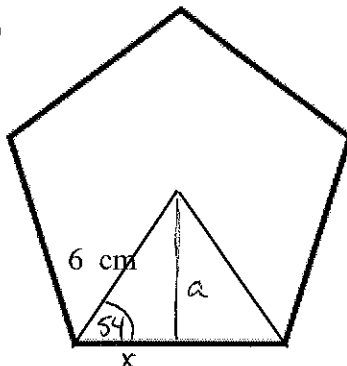
$\tan 54 = \frac{6}{x}$   
 $P = 43.6$   $x = 4.36$

$a = 6$

Area = 130.8

$\frac{(5-2)180}{5}$

5)



$P = 35.3$

$a = 4.85$

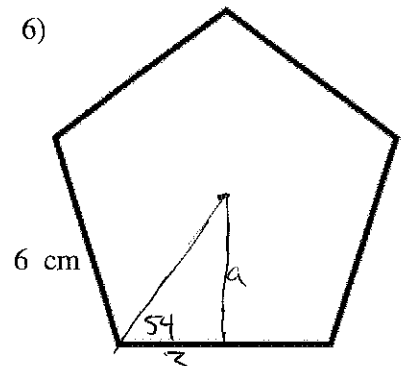
Area = 85.6

$\sin 54 = \frac{a}{6}$

$\cos 54 = \frac{x}{6}$

$x = 3.53$

6)



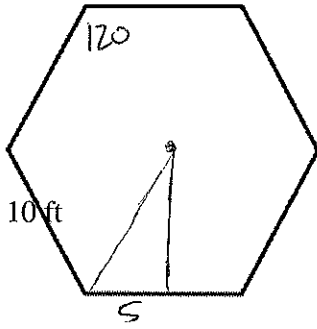
$\tan 54 = \frac{9}{3}$   
 $P = 30$

$a = 4.13$

Area = 61.95

$$\frac{(6-2)180}{6}$$

7)

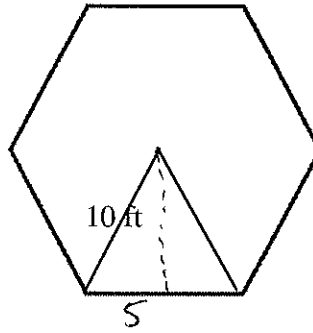


P = 60

a =  $5\sqrt{3}$

Area =  $150\sqrt{3} \approx 259.8 \text{ ft}^2$

8)

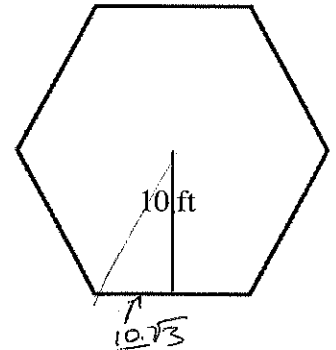


P = 60

a =  $5\sqrt{3}$

Area =  $150\sqrt{3} \approx 259.8 \text{ ft}^2$

9)

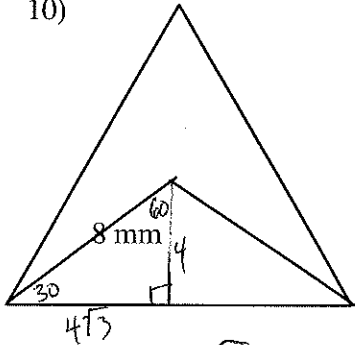


P =  $20\sqrt{3} \approx 34.64$

a = 10

Area =  $200\sqrt{3} \approx 346.41 \text{ ft}^2$

10)

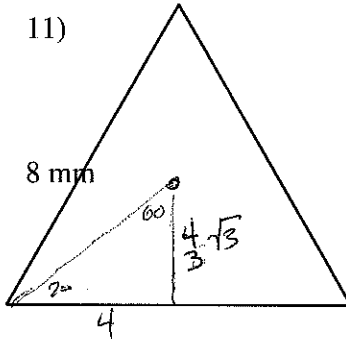


P =  $24\sqrt{3}$

a = 4

Area =  $48\sqrt{3} \approx 83.14 \text{ mm}^2$

11)

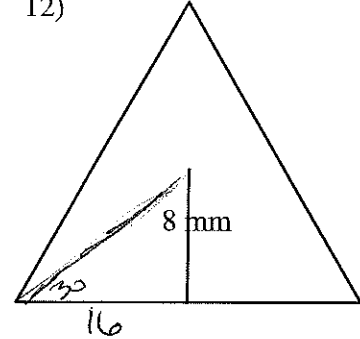


P = 24

a =  $\frac{4\sqrt{3}}{3}$

Area =  ~~$16\sqrt{3}$~~   $16\sqrt{3} \approx 27.71 \text{ mm}^2$

12)

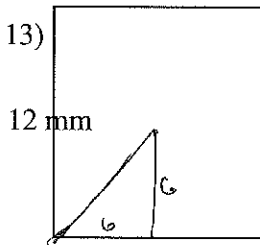


P = 96

a = 8

Area =  $384 \text{ mm}^2$

13)

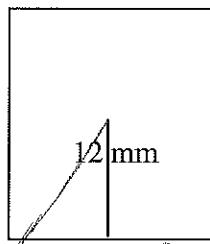


P = 48

a = 6

Area =  $144 \text{ mm}^2$

14)

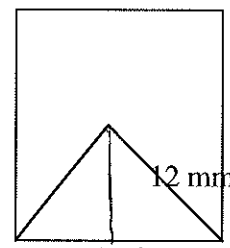


P = 12 12 96

a = 12

Area =  $576 \text{ mm}^2$

15)



P =  $48\sqrt{2}$

a =  $6\sqrt{2}$

Area =  ~~$144\sqrt{2}$~~   $288 \text{ mm}^2$