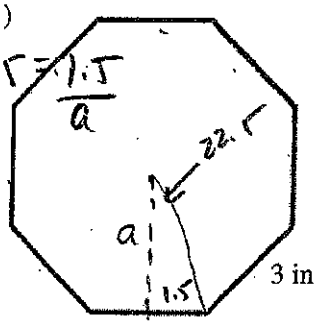
GEOMETRY
Area (apothem) worksheet

Name KEY

Date _____ HR_____

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

1)



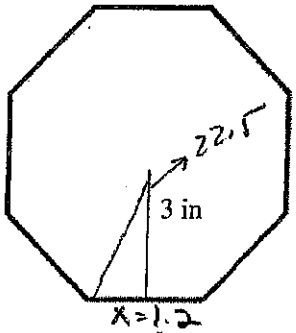
$\tan 22.5 = \frac{1.5}{a}$

P = 24

a = 3.6

Area = 43.2

2)



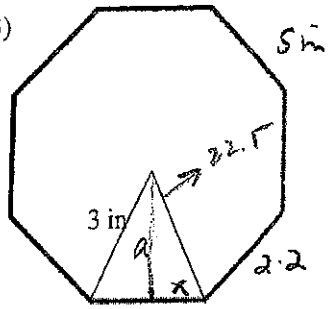
$\tan 22.5 = \frac{x}{3}$

P = 19.2

a = 3

Area = 28.8

3)



$\cos 22.5 = \frac{a}{3}$

$\sin 22.5 = \frac{x}{3}$

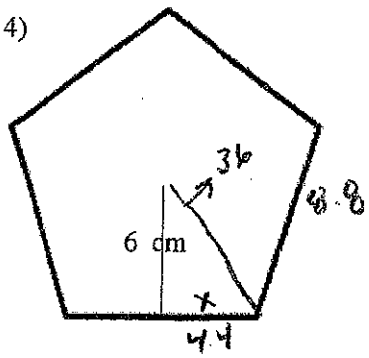
$x = 1.1$

P = 17.6

a = 2.8

Area = 24.6

4)

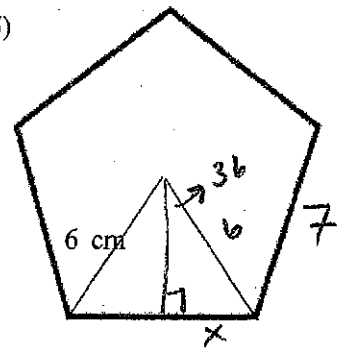


P = 44

a = 6

Area = 132

5)

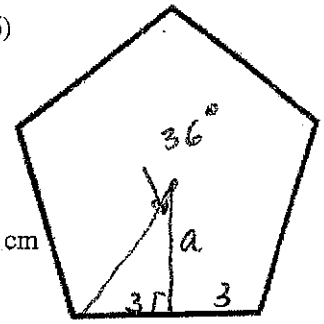


P = 35

a = 4.9

Area = 85.8

6)



P = 30

a = 4.1

Area = 61.5

$\tan 36 = \frac{3}{a}$

* $\tan 36 = \frac{x}{6}$

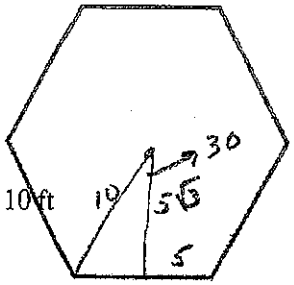
$\sin 36 = \frac{x}{6}$

$\cos 36 = \frac{a}{6}$

$x = 3.5$

$\frac{30}{\sqrt{3}} \cdot \frac{30\sqrt{3}}{3} = 10\sqrt{3}$

7)

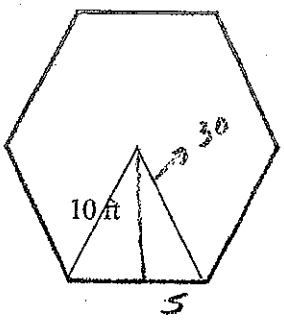


P = 60

a = $5\sqrt{3}$

Area = $150\sqrt{3}$

8)

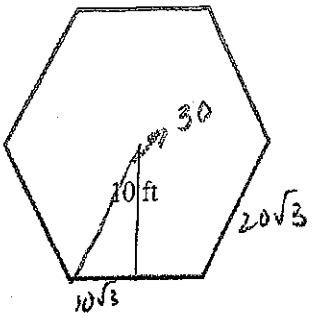


P = 60

a = $5\sqrt{3}$

Area = $150\sqrt{3}$

9)

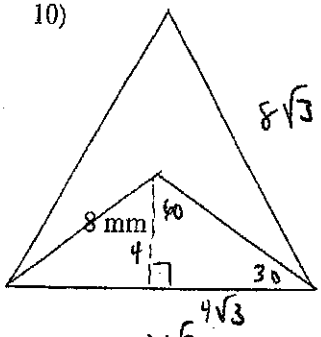


P = $120\sqrt{3}$

a = 10

Area = $600\sqrt{3}$

10)

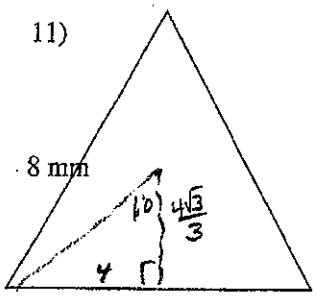


P = $24\sqrt{3}$

a = 4

Area = $48\sqrt{3}$

11)

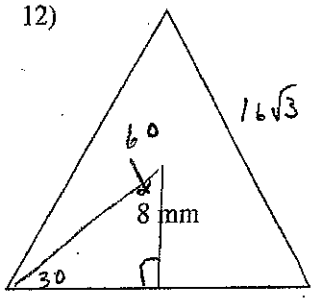


P = 24

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

Area = $16\sqrt{3}$

12)

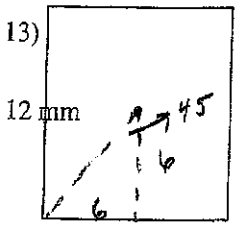


P = $48\sqrt{3}$

a = 8

Area = $192\sqrt{3}$

13)

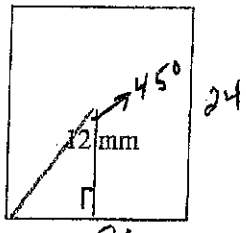


P = 48

a = 6

Area = 144

14)

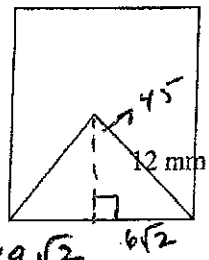


P = 96

a = 12

Area = 576

15)



P = $48\sqrt{2}$

a = $6\sqrt{2}$

Area = 288