

Name: _____

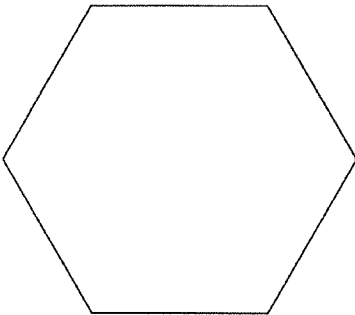
Hour: _____

Area of Regular Polygons Worksheet

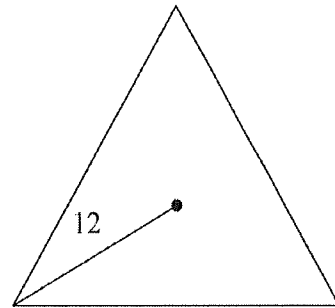
Directions: Find the area of the regular polygon. Show all work. Find exact values when possible.

1. Find the area of a **regular triangle** with perimeter of 21 km.

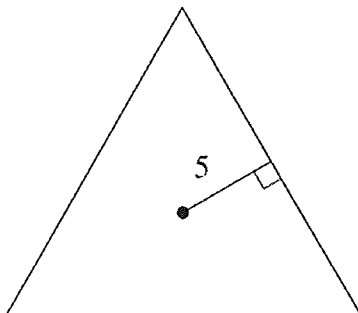
2. $S = 62\text{m}$



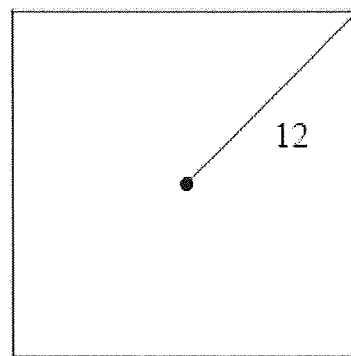
3.



4.

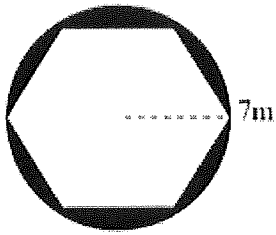


5.

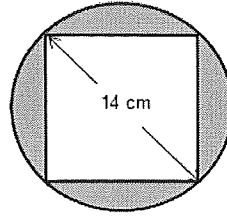


Directions: Find the area of the shaded region. Show all work.

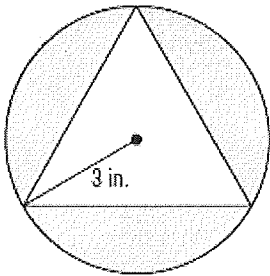
6.



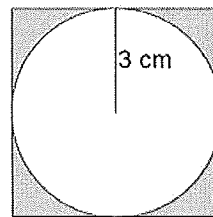
7.



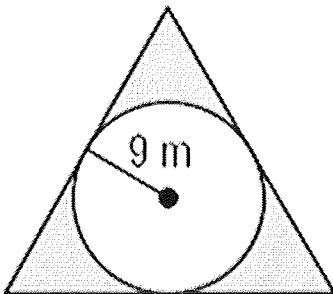
8.



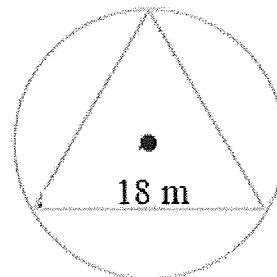
9.



10.



11.



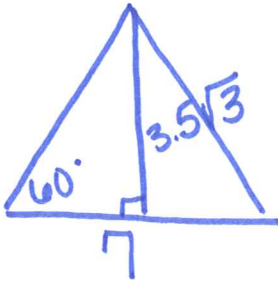
Name: key

Hour: _____

Area of Regular Polygons Worksheet

Directions: Find the area of the regular polygon. Show all work. Find exact values when possible.

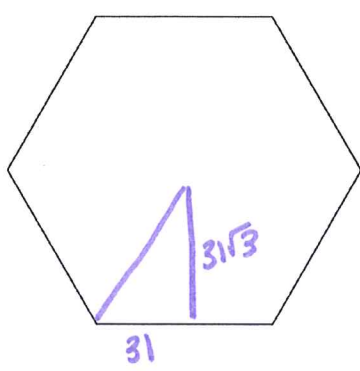
1. Find the area of a **regular triangle** with perimeter of 21 km.



$$A = \frac{1}{2} 7 \cdot 3.5\sqrt{3}$$

$$A = 12.25\sqrt{3} \text{ km}^2$$

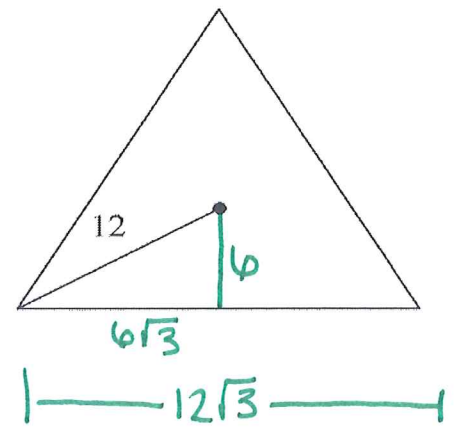
2. $S = 62\text{m}$



$$A = 6 \cdot \frac{1}{2} 62 \cdot 31\sqrt{3}$$

$$A = 5766\sqrt{3} \text{ m}^2$$

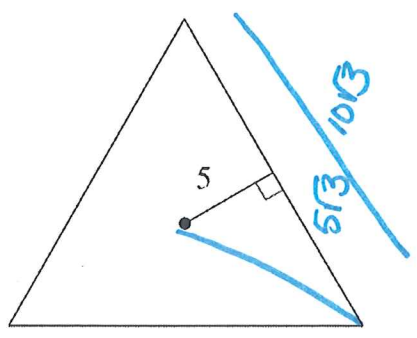
3.



$$A = 3 \cdot \frac{1}{2} 12\sqrt{3} \cdot 6$$

$$A = 108\sqrt{3} \text{ units}^2$$

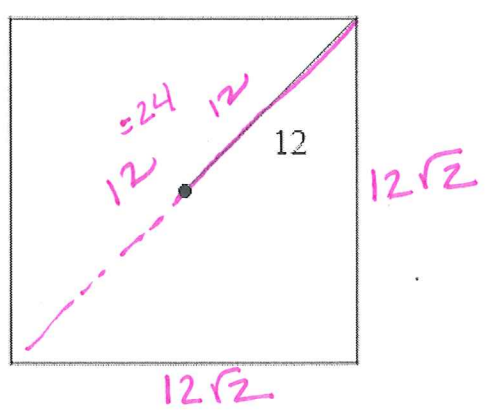
4.



$$A = 3 \cdot \frac{1}{2} 10\sqrt{3} \cdot 5$$

$$A = 75\sqrt{3} \text{ units}^2$$

5.

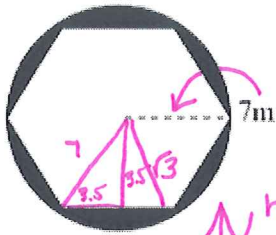


$$A = 12\sqrt{2} \cdot 12\sqrt{2} = 144 \cdot 2$$

$$A = 288 \text{ units}^2$$

Directions: Find the area of the shaded region. Show all work.

6.



$$A = \text{Circle} - \triangle$$

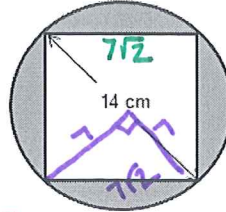
$$A = \pi r^2 - b\left(\frac{1}{2} b \cdot h\right)$$

$$A = \pi 7^2 - b\left(\frac{1}{2} 7 \cdot 3.5\sqrt{3}\right)$$

$$A = 49\pi - 73.5\sqrt{3} \text{ m}^2$$

$$A \approx 26.632 \text{ m}^2$$

7.



$$A = \text{Circle} - \text{Square}$$

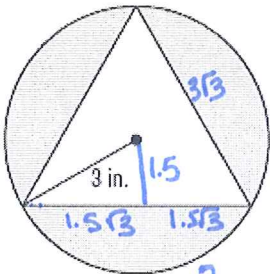
$$A = \pi 7^2 - 7\sqrt{2} \cdot 7\sqrt{2}$$

$$A = 49\pi - 98 \text{ cm}^2 \text{ exact!!!!!!}$$

$$A \approx 55.938 \text{ cm}^2$$

Rounded

8.



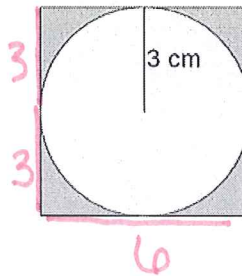
$$A = \text{Circle} - \triangle$$

$$A = \pi 3^2 - 3\left(\frac{1}{2} 3\sqrt{3} \cdot 1.5\right)$$

$$A = 9\pi - 6.75\sqrt{3} \text{ in}^2$$

$$A \approx 16.583 \text{ in}^2$$

9.



$$A = \text{Square} - \text{circle}$$

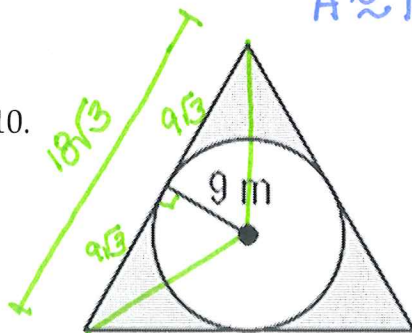
$$A = b \cdot h - \pi r^2$$

$$A = 6 \cdot 6 - \pi 3^2$$

$$A = 36 - 9\pi \text{ cm}^2$$

$$A \approx 7.726 \text{ cm}^2$$

10.



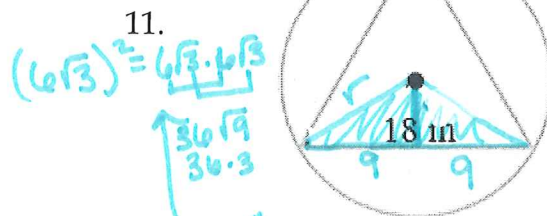
$$A = 3 \frac{1}{2} b \cdot h - \text{Circle}$$

$$A = 3 \frac{1}{2} 18\sqrt{3} \cdot 9 - \pi 9^2$$

$$A = 243\sqrt{3} - 81\pi \text{ m}^2$$

$$A \approx 166.419 \text{ m}^2$$

11.



$$(6\sqrt{3})^2 = 6\sqrt{3} \cdot 6\sqrt{3}$$

$$= 36\sqrt{9} = 36 \cdot 3$$

$$A = \text{Circle} - \triangle$$

$$A = \pi (6\sqrt{3})^2 - 3 \frac{1}{2} 18 \cdot 9$$

$$A = 108\pi - 81\sqrt{3} \text{ in}^2$$

$$A \approx 198.996 \text{ in}^2$$