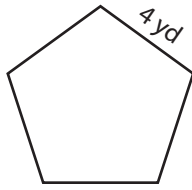


Name : \_\_\_\_\_

## Area of a Polygon

Example:

Find the area of the polygon.

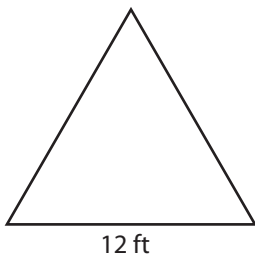


$$\begin{aligned} \text{Area} &= \frac{s^2 \times n}{4 \left[ \tan \left( \frac{180}{n} \right) \right]} \\ &= \frac{16 \times 5}{4 \left[ \tan \left( \frac{180}{5} \right) \right]} = 27.53 \text{ yd}^2 \end{aligned}$$

s = side length  
n = number of sides

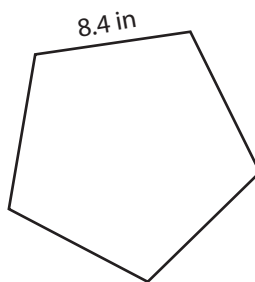
Find the area of each polygon using the given side length. Round your answer to two decimal places.

1)



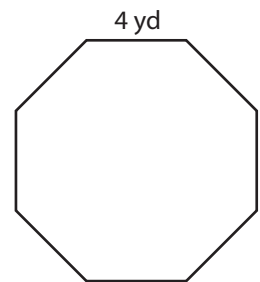
Area = \_\_\_\_\_

2)



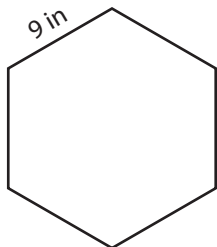
Area = \_\_\_\_\_

3)



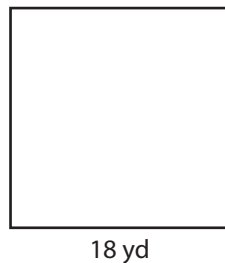
Area = \_\_\_\_\_

4)



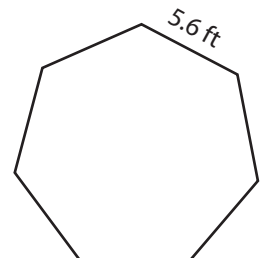
Area = \_\_\_\_\_

5)



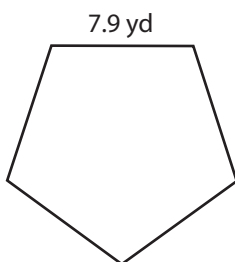
Area = \_\_\_\_\_

6)



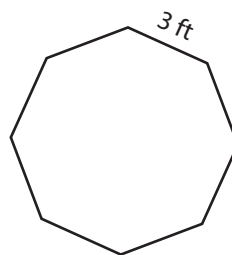
Area = \_\_\_\_\_

7)



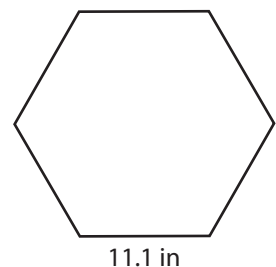
Area = \_\_\_\_\_

8)



Area = \_\_\_\_\_

9)



Area = \_\_\_\_\_

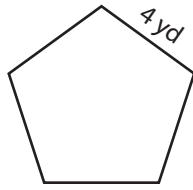
Name : \_\_\_\_\_

**Answer key**

**Area of a Polygon**

Example:

Find the area of the polygon.

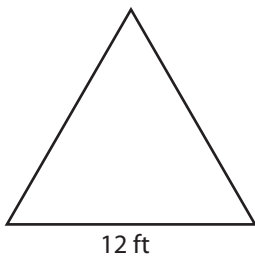


$$\begin{aligned} \text{Area} &= \frac{s^2 \times n}{4 \left[ \tan \left( \frac{180}{n} \right) \right]} \\ &= \frac{16 \times 5}{4 \left[ \tan \left( \frac{180}{5} \right) \right]} = \mathbf{27.53 \text{ yd}^2} \end{aligned}$$

s = side length  
n = number of sides

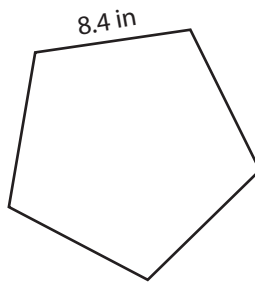
Find the area of each polygon using the given side length. Round your answer to two decimal places.

1)



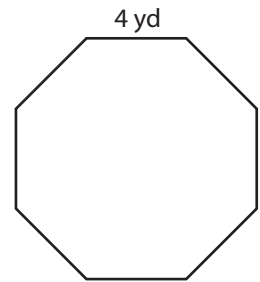
Area = **62.35 ft<sup>2</sup>**

2)



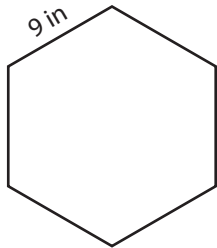
Area = **121.4 in<sup>2</sup>**

3)



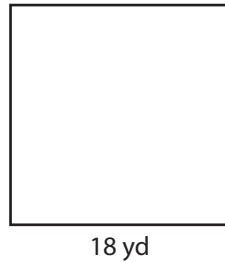
Area = **77.26 yd<sup>2</sup>**

4)



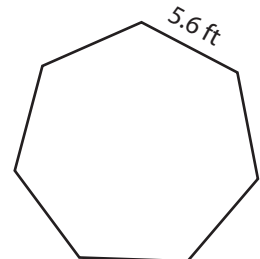
Area = **210.43 in<sup>2</sup>**

5)



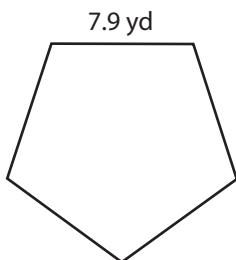
Area = **324 yd<sup>2</sup>**

6)



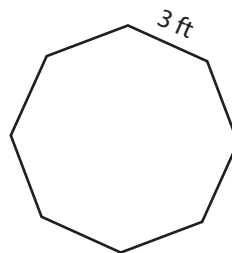
Area = **113.95 ft<sup>2</sup>**

7)



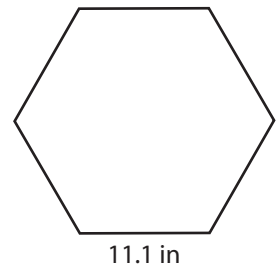
Area = **107.38 yd<sup>2</sup>**

8)



Area = **43.46 ft<sup>2</sup>**

9)



Area = **320.08 in<sup>2</sup>**