

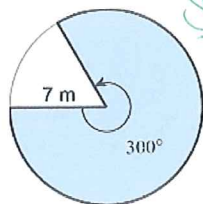
Name: \_\_\_\_\_

Date: \_\_\_\_\_

# GEOMETRIC PROBABILITY DAY #2- HW

Find the area of both regions and then find the probability that a point chosen at random lies in the shaded region. Round your answers to the nearest tenth.

1.



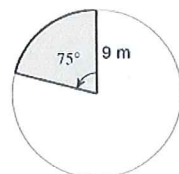
Shaded:  $\frac{300}{360} \cdot \pi (7)^2 = 128.3 \text{ m}^2$

Total:  $49\pi = 153.9 \text{ m}^2$

Prob.:  $\frac{128.3}{153.9} = .833$

83.3%

2.



Shaded:

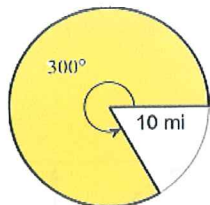
$\frac{75}{360} \cdot 9^2 \pi = 53.01$

Total:  $81\pi = 254.5 \text{ m}^2$

Prob.:  $\frac{53.0}{254.5} = .208$

20.8%

3.



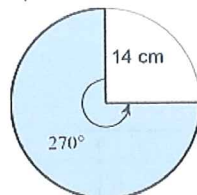
Shaded:  $\frac{300}{360} \cdot \pi 10^2 = 261.8 \text{ mi}^2$

Total:  $100\pi = 314.2 \text{ mi}^2$

Prob.:  $\frac{261.8}{314.2} = .833$

83.3%

4.



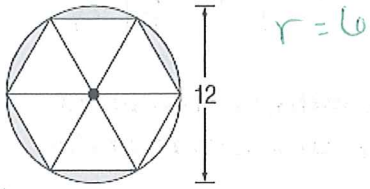
Shaded:  $\frac{270}{360} \cdot \pi 14^2 = 461.8 \text{ cm}^2$

Total:  $196\pi = 615.8$

Prob.:  $\frac{461.8}{615.8} = .749$

75%

5.



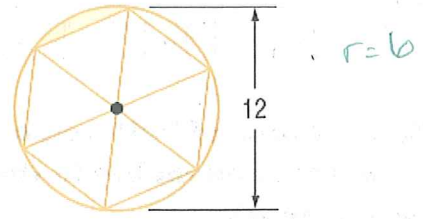
$$\begin{aligned} \text{Shaded} &: \frac{5}{6} (O - \text{hexagon}) \\ &= \frac{5}{6} (\pi 6^2 - 6(\frac{1}{2})(6)^2 \sin 60) \\ &= \frac{5}{6} (19.57) = 16.3 \text{ units}^2 \end{aligned}$$

$$\text{Total} : 36\pi = 113.1 \text{ units}^2$$

$$\text{Prob} : \frac{16.3}{113.1} = .144$$

$$= \boxed{14.4\%}$$

6.



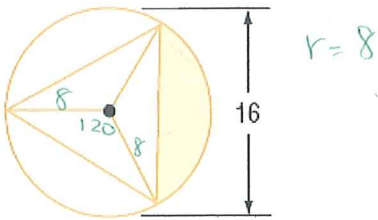
$$\begin{aligned} \text{Shaded} &: \frac{1}{6} (O - \text{hexagon}) \\ &= \frac{1}{6} (\pi 6^2 - 6(\frac{1}{2})(6)^2 \sin 60) \\ &= \frac{1}{6} (19.57) = 3.26 \text{ units}^2 \end{aligned}$$

$$\text{Total} : 36\pi = 113.1 \text{ units}^2$$

$$\text{Prob} : \frac{3.26}{113.1} = .0288$$

$$= \boxed{2.9\%}$$

7.



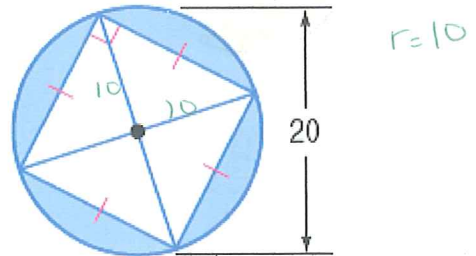
$$\begin{aligned} \text{Shaded} &: \frac{1}{3} (O - \Delta) \\ &= \frac{1}{3} (\pi 8^2 - 3(\frac{1}{2})(8)^2 \sin 120) \\ &= \frac{1}{3} (117.92) = 39.3 \text{ units}^2 \end{aligned}$$

$$\text{Total} : 64\pi = 201.1 \text{ units}^2$$

$$\text{Prob} : \frac{39.3}{201.1} = .195$$

$$= \boxed{19.5\%}$$

8.



$$\begin{aligned} \text{Shaded} &: O - \square \\ &= \pi 10^2 - 4(\frac{1}{2})(10)^2 \sin 90 \\ &= 114.2 \text{ units}^2 \end{aligned}$$

$$\text{Total} : 100\pi = 314.2 \text{ units}^2$$

$$\text{Prob} : \frac{114.2}{314.2} = .364$$

$$= \boxed{36.4\%}$$