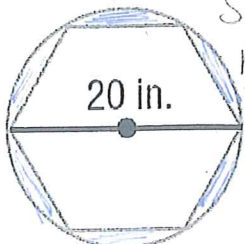
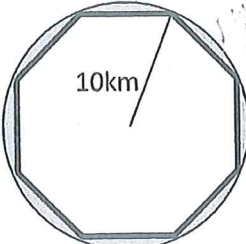


Name: Kelly Date: _____

Geometric Probability HW#1

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:
 $A = 10^2\pi - 6(\frac{1}{2})10^2\sin 60$
 $A = 54.35 \text{ in}^2$
 Total: $100\pi \text{ in}^2$

2.  Shaded:
 $A = 100\pi - 8(\frac{1}{2})10^2\sin 45$
 $A \approx 31.32 \text{ km}^2$
 Total: $100\pi \text{ km}^2$

$$\frac{\text{Area of shaded}}{\text{Area of Total}} = \frac{54.35}{(100\pi)}$$

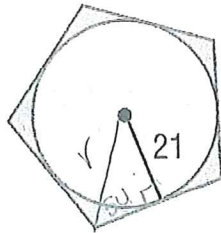
$$\approx 17\% \quad 17.3\%$$

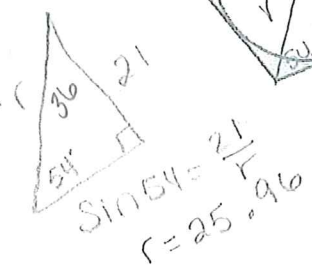
$$\approx .2$$

$$\frac{\text{Area of shaded}}{\text{Area of Total}} = \frac{31.32}{(100\pi)}$$

$$\approx 10\%$$

$$\approx .1$$

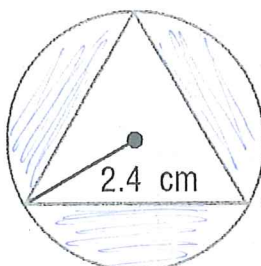
3.  Shaded
 Pentagon - 0
 $5(\frac{1}{2})(25.96)^2\sin 72 - \pi 21^2$
 $A \approx 216.90 \text{ units}^2$
 Total:
 $5(\frac{1}{2})(25.96)^2\sin 72$
 $\approx 1602.34 \text{ units}^2$



$$\frac{\text{Area of shaded}}{\text{Area of Total}} = \frac{216.90}{1602.34}$$

$$\approx 14\%$$

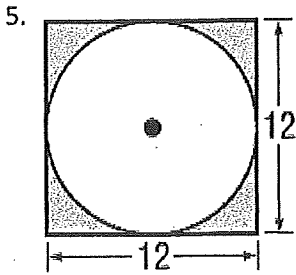
$$\approx .1$$

4.  Shaded
 $\pi (2.4)^2 - 3(\frac{1}{2})(2.4)^2\sin 60$
 $A = 10.61 \text{ cm}^2$
 Total: 18.10 cm^2

$$\frac{\text{Area of shaded}}{\text{Area of Total}} = \frac{10.61}{18.10}$$

$$\approx 59\%$$

$$\approx .6$$



Shaded

$$12 \cdot 12 - \pi 6^2$$

$$A = 144 - 36\pi$$

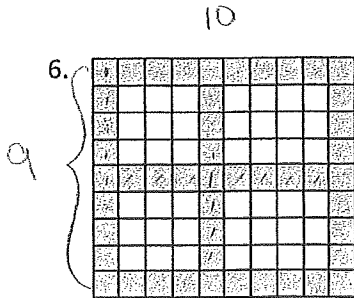
$$A \approx 30.90 \text{ units}^2$$

$$\text{Total} : 144 \text{ units}^2$$

$$\frac{\text{Area of shaded}}{\text{Area of Total}} = \frac{30.90}{144}$$

$$\approx 21\%$$

$$\approx .2$$

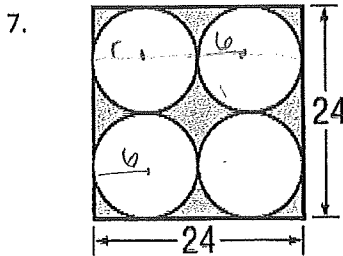


$$\frac{\text{Area of shaded}}{\text{Area of Total}} = \frac{48}{90}$$

$$\approx 53\%$$

$$\approx .5$$

Area of shaded



$$24 \cdot 24 - 4 \cdot (\pi 6^2)$$

$$A = 576 - 144\pi$$

$$A \approx 123.61 \text{ units}^2$$

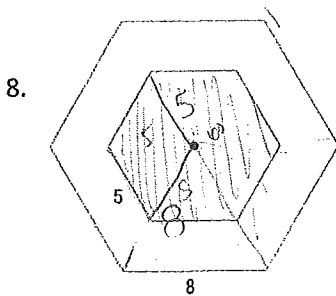
Total:

$$24 \cdot 24 = 576 \text{ units}^2$$

$$\frac{\text{Area of shaded}}{\text{Area of Total}} = \frac{123.61}{576}$$

$$\approx 21\%$$

$$\approx .2$$



Shaded:

$$6 \left(\frac{1}{2} \right) 5 \cdot 5 \sin 60$$

$$A \approx 64.95 \text{ units}^2$$

$$\text{Total} : 6 \left(\frac{1}{2} \right) 8 \cdot 8 \cdot \sin 60$$

$$A \approx 166.28 \text{ units}^2$$

$$\frac{\text{Area of shaded}}{\text{Area of Total}} = \frac{64.95}{166.28}$$

$$\approx 39\%$$

$$\approx .4$$

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