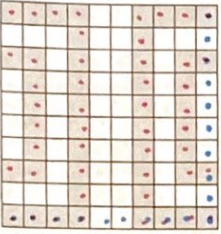


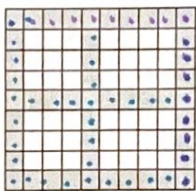
Name: Key

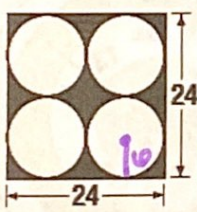
Date: _____

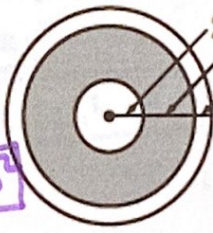
Geometric Probability Practice 2020

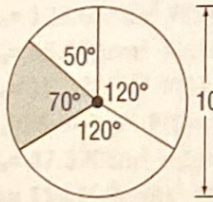
Find the area of the shaded region and the probability that a point chosen at random lies in the shaded region. Round your answers to the nearest tenth and percentages.

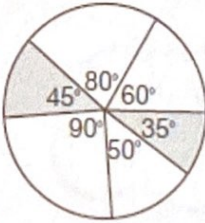
1.  $A_S = 48 \text{ units}^2$
 $\frac{48}{100} = 48.0\%$
 $P(S) = 48.0\%$
 $A_T = 100 \text{ units}^2$

2.  $A_T = 90 \text{ units}^2$
 $A_S = 48 \text{ units}^2$
 $P(S) = \frac{48}{90} = 0.5333\ldots$
 $P(S) \approx 53.3\%$

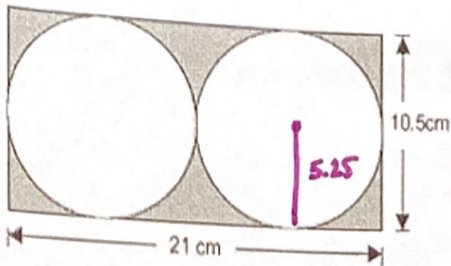
3.  $A_T = 24 \cdot 24 = 576$
 $A_S = 576 - 4\pi(6)^2$
 $A_S \approx 123.611 \text{ units}^2$
 $P(S) = \frac{123.611}{576} \approx 0.21460$
 $P(S) \approx 21.5\%$

4.  $A_T = \pi(5)^2 = 25\pi$
 $A_T \approx 113.097 \text{ cm}^2$
 $A_S = \pi(5)^2 - \pi(2)^2$
 $A_S = 25\pi - 4\pi = 21\pi$
 $A_S \approx 65.973 \text{ cm}^2$
 $P(S) = \frac{65.973}{113.097} = 0.583$
 $P(S) = 58.3\%$

5.  $r = 5$
 $A_S = \frac{70}{360} \cdot \pi(5)^2$
 $A_S \approx 15.272 \text{ cm}^2$
 $A_T = \pi(5)^2$
 $A_T = 25\pi \text{ cm}^2$
 $A_T \approx 78.540 \text{ cm}^2$
 $P(S) = \frac{15.272}{78.54} \approx 0.1944$
 $P(S) \approx 19.4\%$

6.  $r = 9$
 $A_S = \frac{45+35}{360} \cdot \pi(9)^2$
 $A_S \approx 56.549 \text{ in}^2$
 $A_T = \pi(9)^2$
 $A_T = 81\pi \text{ in}^2$
 $A_T \approx 254.469$
 $P(S) = \frac{56.549}{254.469} = 0.222$
 $P(S) \approx 22.2\%$

Notice for these special cases!
 $\frac{70}{360} = .1944$
 $\frac{80}{360} \Rightarrow$



$$A_T = 10.5 \times 21 = 220.5 \text{ cm}^2$$

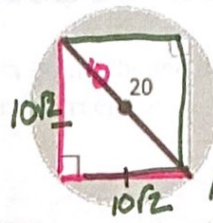
$$A_S = 220.5 - 2\pi(5.25)^2$$

$$A_S \approx 47.320 \text{ cm}^2$$

$$P(S) = \frac{47.320}{220.5} = 0.2146$$

$$P(S) \approx 21.5\%$$

8. A square with a diagonal of 20 units.



$$A_T = \pi 10^2$$

$$A_T = 314.15902$$

$$A_S = \pi 10^2 - 10\sqrt{2} \cdot 10\sqrt{2}$$

$$A_S = 314.159 - 200$$

$$A_S = 114.15902$$

Area of Square

$$A = 10\sqrt{2} \cdot 10\sqrt{2}$$

$$A = 10 \cdot 10 \cdot \sqrt{2} \cdot \sqrt{2}$$

$$A = 10 \cdot 10 \cdot 2$$

$$A = 20002$$

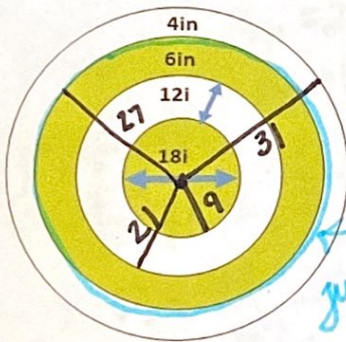
$$P(S) = \frac{114.159}{314.159}$$

$$P(S) \approx 0.3633$$

$$P(S) \approx 36.3\%$$

9. Some units were cut off, assume all are inches.

* Obviously, this is NOT drawn to scale :)



$$A_T = \pi 31^2$$

$$A_T = 961\pi \text{ in}^2 \approx 3019.071 \text{ in}^2$$

$$A_S = \pi 27^2 - \pi 21^2 + \pi 9^2$$

just go out
to take
+
add center
circle like
MOKS example

$$A_S = 729\pi - 441\pi + 81\pi$$

$$A_S = 369\pi \text{ in}^2$$

$$A_S \approx 1159.248 \text{ in}^2$$

Solutions:

53.3%

1.) 48.0% 2.) 53.0%

3.) $A_S = 123.6 \text{ units}^2$ $P(S) = 21.5\%$

4.) $A_S = 65.973 \text{ cm}^2$ $P(S) = 58.3\%$

5.) $A_S = 15.272 \text{ cm}^2$ $P(S) = 19.4\%$

6.) $A_S = 56.549 \text{ in}^2$ $P(S) = 22.2\%$

7.) $A_S = 47.320 \text{ cm}^2$ $P(S) = 21.5\%$

8.) $A_S = 114.159 \text{ units}^2$ $P(S) = 36.3\%$

9.) $A_S = 1159.248 \text{ in}^2$ $P(S) = 38.4\%$

$$P(S) = \frac{1159.248}{3019.071} \approx 0.3899$$

$$P(S) \approx 38.4\%$$