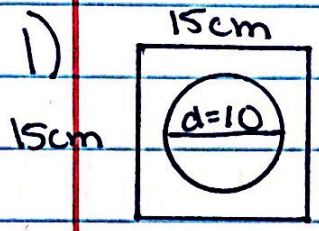
Geometric Probability = $\frac{\text{Favorable Area}}{\text{Total Area}}$

Area Formulas

Square/Rectangle = length x width

Triangle = $\frac{1}{2}$(base)(height)

Circle = π(radius)^2

1) 

Find the probability that a point chosen at random falls inside of the circle.

Total Area (Square)

$A_{square} = \ell w$

$= (15)(15)$

$= 225$

Favorable Area (circle)

$A_{circle} = \pi r^2$

$= \pi(5)^2$

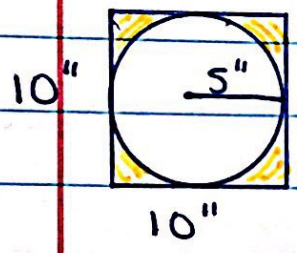
$= 25\pi$

$P(\text{circle}) = \frac{25\pi}{225}$

$= .349$

34.9%

2) There is a circular dartboard with a radius of 5". Find the probability of not hitting the circle.



$A(\text{square}) = l \times w$
$= 10(10)$
$= 100$

$A(\text{circle}) = \pi r^2$
$= \pi(5)^2$
$= 25\pi$

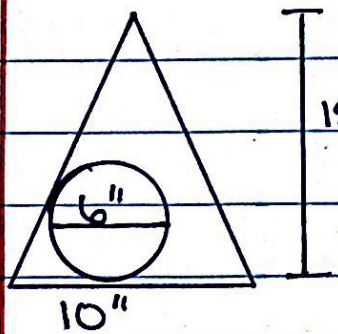
$$P(\text{not hitting circle}) = \frac{\overbrace{\text{Area Square} - \text{Area Circle}}^{\text{Area not Circle}}}{\text{Total Area}}$$

$$= \frac{100 - 25\pi}{100}$$

$$= .215$$

$$21.5\%$$

3) Find the probability that a point chosen at random falls inside of the circle.



$A(\Delta) = \frac{1}{2}bh$
$= \frac{1}{2}(10)(15)$
$= 75$

$A(O) = \pi r^2$
$= \pi(3)^2$
$= 9\pi$

$$P(\text{circle}) = \frac{9\pi}{75}$$

$$= .377$$

$$37.7\%$$