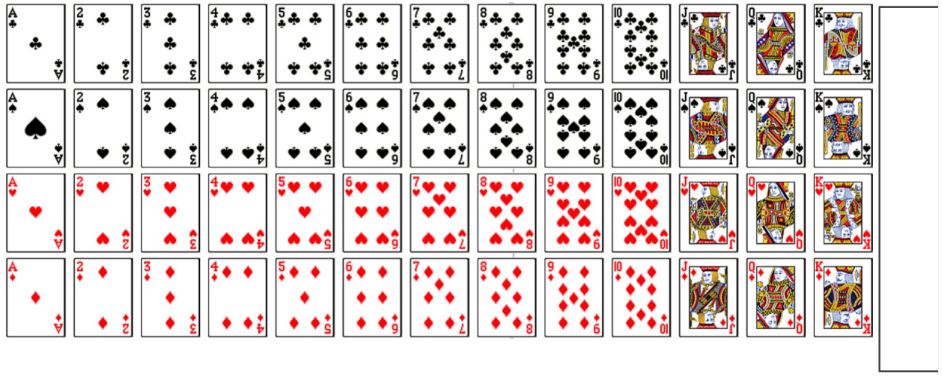
Standard Deck of cards - 52 cards



You are going to take a random card from a standard deck.
Find each probability as a fraction.

1. P(10 or King) $= \frac{8}{52}$ (4 + 4)

2. P(Club or Heart) $= \frac{26}{52}$ (13 + 13)

3. P(Red Queen or Black Ace) $= \frac{4}{52}$ (2 + 2)

You are going to take a random card from a standard deck.
Find each probability as a fraction.

4. P(Black Face card) $= \frac{6}{52}$

5. P(Diamond or a 5) $= \frac{16}{52}$ (13 + 4 − 1)

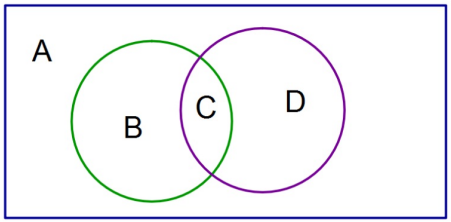
   - 13: # of diamonds
   - 4: # of fives
   - −1: # of cards that are both a diamond and a five.

6. P(Ace or King or Club) $= \frac{19}{52}$ (4 + 4 + 11)

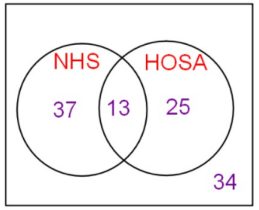
   - 4: # of aces
   - 4: # of Kings
   - 11: # of remaining cards that are clubs (ace of clubs and king of clubs have already been counted)

Venn Diagram

Shows the relationship between several groups.



The Venn Diagram below shows after school activities that students belong to.



You will select a student at random, find each probability as a fraction.

Total = 37 + 13 + 25 + 34 = 109

1. P(NHS but not HOSA) = 37/109 those in NHS circle but can't be in HOSA circle
2. P(Neither HOSA nor NHS) = 34/109 those in the diagram but not in either circle
3. P(HOSA and NHS) = 13/109 those in the part where the circles overlap
4. P(not NHS) = 59/109 all those outside the NHS circle or the total minus those in the NHS circle

You can now finish Hwk #29

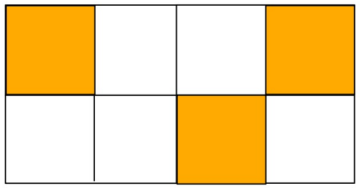
Sec 1-6 **Due Tomorrow**

page 43

problems 8, 9, 11-14, 30-34, 36, 40

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

Find the probability that if a dart lands in the rectangle that it lands in the shaded region. Give your answer as a percent. Round to the nearest hundredth as needed.

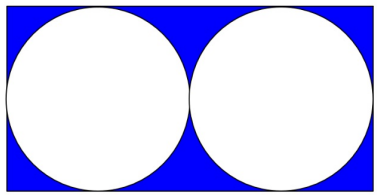


$= \frac{3 \text{ shaded squares}}{8 \text{ total squares}}$

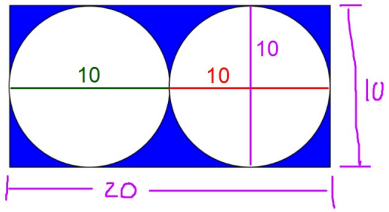
$= 37.5\%$

Because all the little squares are the same size you can use counting to find probability.

Find the probability that a dart that lands in the rectangle will land in the shaded region. Give your answer as a percent. Round to the nearest tenth as needed.



the diameter of each circle is 10 inches.



Area of the rectangle = (20)(10) = 200

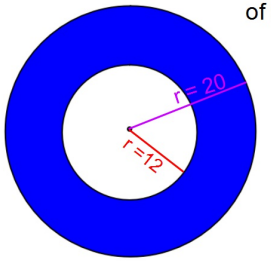
radius of each circle = 10/2 = 5

$P = \frac{\text{Rec} - 2 \text{ circles}}{\text{Rec}}$

$= \frac{200 - 2\pi(5)^2}{200}$

$= \frac{200 - 50\pi}{200} = 21.5\%$

Find the probability that if a dart lands on the target that it lands in the shaded region. Give your answer as a percent.



The area of a "ring" is found by taking area of the outer big circle minus the area of the inner small circle.

The radius of the smaller circle is 12 cm and the radius of the larger circle is 20 cm.

$$P = \frac{\text{big circle - small circle}}{\text{big circle}}$$

$$= \frac{\pi(20)^2 - \pi(12)^2}{\pi(20)^2}$$

$$= \frac{400\pi - 144\pi}{400\pi}$$

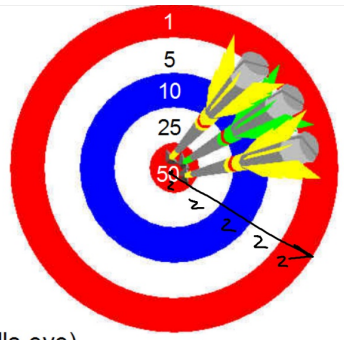
$$= \frac{400 - 144}{400} = \frac{256}{400}$$

$$= \frac{64}{100}$$

$$= 64\%$$

The radius of the bulls-eye is 2 cm and the width of each ring is also 2 cm.

Find each probability as a percent to the nearest tenth.



1. P(dart lands in the bulls-eye)

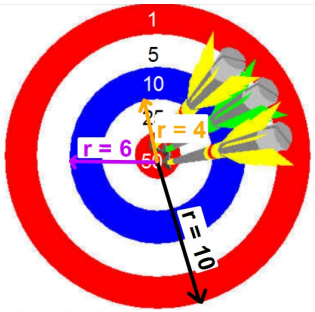
$$= \frac{\text{Smallest Circle}}{\text{biggest circle}} = \frac{\pi(2)^2}{\pi(10)^2}$$

$$= \frac{4\pi}{100\pi} = \frac{4}{100}$$

$$= 4\%$$

The radius of the bulls-eye is x cm and the width of each ring is also x cm.

Find each probability as a percent to the nearest tenth.



2. P(dart lands in the 10 point ring)

$$= \frac{\text{area of 10 pt ring}}{\text{area of the target}} = \frac{\pi(6)^2 - \pi(4)^2}{\pi(10)^2} = \frac{36\pi - 16\pi}{100\pi} = \frac{20\pi}{100\pi} = 20\%$$