Bellwork Alg 2 Wednesday, May 29, 2019 6TH HR

For 1 to 3 find the number of outcomes for each situation.

1. A restaurant offers four sizes of pizza, three types of crust, and eight toppings. How many possible combinations of pizza with two toppings are there?

2. Your car's radio has buttons for 5 preset radio stations. You have 7 favorite stations you like to listen to. How many ways can you preset radio stations on your car radio?

3. On your phone you have 20 songs. If there is an option to play these songs in a random order how many different orders of these songs can be created?

4. A survey was taken asking people what their favorite color is. Find each probability as a fraction without reducing. The results are shown in this table:

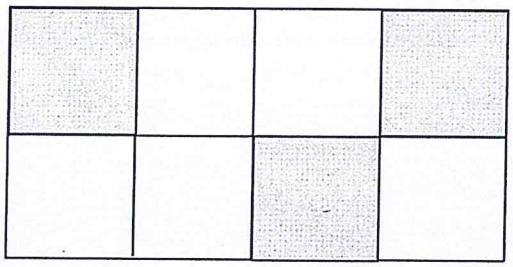
| | Green | Red | Orange | Blue | Total |
|---|---|---|---|---|---|
| Women | 31 | 19 | 21 | 3 | 74 |
| Men | 44 | 26 | 11 | 8 | 89 |
| Total | 75 | 45 | 32 | 11 | 163 |

a) P(Orange or Blue) b) P(Red or Woman) c) P(Man and Green)

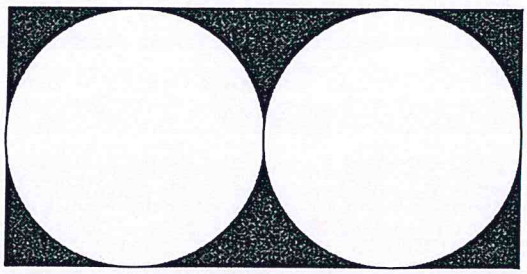
5. Geometric probability $= \frac{\text{Area of shaded region}}{\text{Total Area}}$

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.

a)



b) The diameter of each circle is 10 in.



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ANSWERS

For 1 to 3 find the number of outcomes for each situation.

1. A restaurant offers four sizes of pizza, three types of crust, and eight toppings. How many possible combinations of pizza with two toppings are there?

$\underset{\text{size}}{4} \cdot \underset{\text{crust}}{3} \cdot \underset{\text{toppings}}{{}_8C_2} = 4 \cdot 3 \cdot 28 =$ **336**

2. Your car's radio has buttons for 5 preset radio stations. You have 7 favorite stations you like to listen to. How many ways can you preset radio stations on your car radio?

${}_7P_5 =$ **2520**

3. On your phone you have 20 songs. If there is an option to play these songs in a random order how many different orders of these songs can be created?

${}_{20}P_{20}$ or $20!$ = $2.43 \times 10^{18}$

4. A survey was taken asking people what their favorite color is. Find each probability as a fraction without reducing. The results are shown in this table:

| | Green | Red | Orange | Blue | Total |
|---|---|---|---|---|---|
| Women | 31 | 19 | 21 | 3 | 74 |
| Men | 44 | 26 | 11 | 8 | 89 |
| Total | 75 | 45 | 32 | 11 | 163 |

a) P(Orange or Blue) $= \frac{32+11}{163} = \frac{43}{163}$

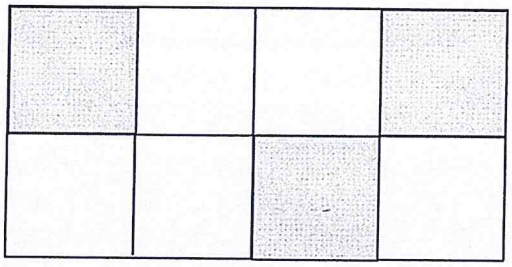
b) P(Red or Woman) $= \frac{100}{163}$

c) P(Man and Green) $= \frac{44}{163}$

5. Geometric probability $= \frac{\text{Area of shaded region}}{\text{Total Area}}$

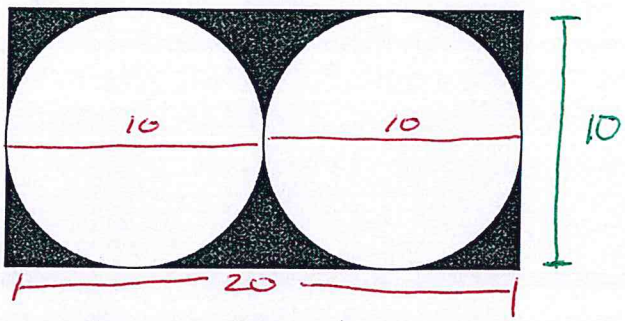
Find the probability that a dart that lands in the rectangle will land in the shaded region. Give your answer as a percent. Round to the nearest tenth as needed.

a)



$\frac{3}{8} =$ **37.5%**

b) The diameter of each circle is 10 in. → radius = 5in




$\frac{\text{Rect} - 2\text{circles}}{\text{Rect}} = \frac{200 - 2(25\pi)}{200} =$ **21.5%**

area of rectangle $= (20)(10) = 200$

area of one circle $= \pi r^2 = \pi(5)^2 = 25\pi$