Algebra 2 Bellwork Monday, April 18, 2016

1. Use the results of the survey shown below of their favorite Food. You will select one person at random. Find each probability as a fraction.

	Pasta	Chicken	Steak	Vegetables	Total
Female	18	23	8	14	63
Male	21	14	16	13	64
Totals	39	37	24	27	127

a) P(Female and Chicken) b) P(Male or Pasta) c) P(Pasta or Steak)

d) P(Vegetables and Pasta) e) P(Female | Steak) f) P(Vegetables | Male)

2. In you pantry at home there are 12 cans of beans, 8 cans of corn, and 10 cans of beets.

a) You take one can at random, don't like what you got and return it to the shelf then you take another can at random. Find the following probability as a fraction. P(Corn and then Beans)

b) You are going to take some some cans and give them to a soup kitchen. You take one can at random and place it in a bag then you reach in and take out another can. Find the following probability as a fraction. P(Beets and then Beets)

3. This weekend is supposed to be warm and sunny. The probability that you work in the yard is $\frac{6}{11}$. The probability that you get sun-burned is $\frac{4}{9}$. Find the following probability as a percent to the nearest hundredth. P(work in the yard or get sun-burned)

4. You have 8 different pictures you want to put up on your wall.

a) How many different ways could you arrange all 8 of the pictures on the wall?

b) If you only have room to hang 5 of them how many different ways could you arrange them on the wall?

5. There are 9 different topping to choose from at the buffet to put on your salad.

a) How many different salads could you make if you want only 4 different toppings?

b) You plate has enough room for all of the toppings. How many different salads could be made if you choose all 9 toppings?

6. A serial number on the back of a TV has 5 numbers and 3 letters. How many different serial numbers are possible if:

a) Letters and numbers can repeat?

b) Letters can't repeat and you can't use the letter 'O' but numbers can repeat.

7. You want to do some painting at home. You can decide on the color so you will get some samples to take home. There are five shades of Red, 3 shades of green, and 7 shades of blue.

a) How many ways can you take one of each color?

b) How many ways can you take one red sample, one green sample, and three blue samples?

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Answers

1. Use the results of the survey shown below of their favorite Food. You will select one person at random. Find each probability as a fraction.

	Pasta	Chicken	Steak	Vegetables	Total
Female	18	23	8	14	63
Male	21	14	16	13	64
Totals	39	37	24	27	127

a) P(Female and Chicken) $= \frac{23}{127}$ b) P(Male or Pasta) $= \frac{82}{127}$ c) P(Pasta or Steak) $= \frac{63}{127}$

d) P(Vegetables and Pasta) $= \frac{0}{127}$ e) P(Female | Steak) $= \frac{8}{24}$ f) P(Vegetables | Male) $= \frac{13}{64}$

2. In you pantry at home there are 12 cans of beans, 8 cans of corn, and 10 cans of beets.

a) You take one can at random, don't like what you got and return it to the shelf then you take another can at random. Find the following probability as a fraction. P(Corn and then Beans)

$\frac{8}{30} \cdot \frac{12}{30} = \frac{96}{900}$

b) You are going to take some some cans and give them to a soup kitchen. You take one can at random and place it in a bag then you reach in and take out another can. Find the following probability as a fraction. P(Beets and then Beets)

$\frac{10}{30} \cdot \frac{9}{29} = \frac{90}{870}$

3. This weekend is supposed to be warm and sunny. The probability that you work in the yard is $\frac{6}{11}$. The probability that you get sun-burned is $\frac{4}{9}$. Find the following probability as a percent to the nearest hundredth. P(work in the yard or get sun-burned)

$\frac{4}{9} + \frac{6}{11} - \frac{4}{9} \cdot \frac{6}{11} = 74.75\%$

4. You have 8 different pictures you want to put up on your wall.

a) How many different ways could you arrange all 8 of the pictures on the wall? ${}_8P_8$ or $8!$ 40,320

b) If you only have room to hang 5 of them how many different ways could you arrange them on the wall?

${}_8P_5 = 6720$

5. There are 9 different topping to choose from at the buffet to put on your salad.

a) How many different salads could you make if you want only 4 different toppings? ${}_9C_4 = 126$

b) You plate has enough room for all of the toppings. How many different salads could be made if you choose all 9 toppings?

${}_9C_9 = 1$

6. A serial number on the back of a TV has 5 numbers and 3 letters. How many different serial numbers are possible if:

a) Letters and numbers can repeat? $10^5 \cdot 26^3$ 1,757,600,000

b) Letters can't repeat and you can't use the letter 'O' but numbers can repeat. $25 \cdot 24 \cdot 23 \cdot 10^5$ 1,380,000,000

7. You want to do some painting at home. You can decide on the color so you will get some samples to take home. There are five shades of Red, 3 shades of green, and 7 shades of blue.

a) How many ways can you take one of each color? $5 \cdot 3 \cdot 7 = 105$

b) 1 red, 1 green, 3 Blue $= 5 \cdot 3 \cdot {}_7C_3$

$= 5 \cdot 3 \cdot 35 = 525$