Bellwork   Alg 2   Wednesday, May 29, 2019

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?

For 4 and 5, find each probability as a fraction without reducing.

4. You roll a die.

a) P(factor of 12)   b) P(Prime and odd)

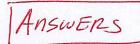c) P(Multiple of three or odd)   d) P(factor of 20 and even)

5. A survey was taken asking people what their favorite color is.

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)

Bellwork   Alg 2   Wednesday, May 29, 2019   **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?

$$\underset{\text{size}}{4} \cdot \underset{\text{crust}}{3} \cdot \underset{\text{Toppings}}{_8C_2} = 4 \cdot 3 \cdot 28 = \boxed{336}$$

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?

$$_7P_5 = \boxed{2520}$$

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?

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

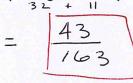For 4 and 5, find each probability as a fraction without reducing.

4. You roll a die.

a) P(factor of 12) $= \boxed{\dfrac{5}{6}}$

1, 12
2, 6
3, 4

b) P(Prime and odd) $= \boxed{\dfrac{2}{6}}$

ODD   PRIME
1   2
③   ③
⑤   ⑤

c) P(Multiple of three or odd) $= \boxed{\dfrac{4}{6}}$

MULT OF 3   ODD
3   1
6   3
              5

d) P(factor of 20 and even) $= \boxed{\dfrac{2}{6}}$

FACTOR OF 20   EVEN
1, 20   ②
②, 10   ④
④, 5   6

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	Green	Red	Orange	Blue	Total
Women	31	19	21	3	74
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a) P(Orange or Blue)
32 + 11
$= \boxed{\dfrac{43}{163}}$

b) P(Red or Woman)
45 + 74 − 19
$= \boxed{\dfrac{100}{163}}$

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

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