

**1. Determine which of the following are valid values for probability.**

a)  $P(A) = 3.5$

Valid or Invalid

b)  $P(B) = 0.2$

Valid or Invalid

c)  $P(C) = 1.1$

Valid or Invalid

d)  $P(A) = 0$

Valid or Invalid

**2. Determine the probability of each event and determine if the events are: (I)mpossible, (UN)likely, (EQ)ually likely, (L)ikely or (C)ertain to happen.**

a) The next week has 7 days in it

b) Average Temperature in Alaska in December is less than  $30^{\circ}\text{F}$

c) Getting a yellow marble from a bag of 5 red & 2 green marbles.

I or UN or EQ or L or C

I or UN or EQ or L or C

I or UN or EQ or L or C

d) You roll a 2 on a die.

e) You roll an even number on a die.

I or UN or EQ or L or C

I or UN or EQ or L or C

**3. A Bag of marbles has 7 yellow, 6 red, and 1 purple. Create a situation that would satisfy the following:**

a) Something that is IMPOSSIBLE to happen.

b) Something that is EQUALLY LIKELY to happen.

c) Something that is LIKELY to happen.

**4. Describe a NEW situation that would satisfy the following. (Do not use something from above.)**

a) Something that is LIKELY to happen.

b) Something that is EQUALLY LIKELY to happen.

c) Something that is CERTAIN to happen.

**5. Determine the basic probability.**

**a) Given a bag of marbles with 7 green, 4 yellow and 2 red, what is the:**

$P(\text{Green}) = \underline{\hspace{2cm}}$        $P(\text{Red}) = \underline{\hspace{2cm}}$        $P(\text{Blue}) = \underline{\hspace{2cm}}$

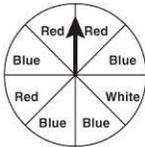
$P(\text{Yellow or Red}) = \underline{\hspace{2cm}}$        $P(\text{Green or Yellow}) = \underline{\hspace{2cm}}$

**b) Given a standard deck of cards, what is the:**

$P(\text{Black 10}) = \underline{\hspace{2cm}}$        $P(\text{Queen}) = \underline{\hspace{2cm}}$        $P(\text{Ace or Jack}) = \underline{\hspace{2cm}}$

$P(\text{Red Card or 9}) = \underline{\hspace{2cm}}$        $P(\text{Queen or 6}) = \underline{\hspace{2cm}}$        $P(\text{King or a Spade}) = \underline{\hspace{2cm}}$

**c) Given the spinner, what is the:**



$P(\text{Red or Blue}) = \underline{\hspace{2cm}}$

$P(\text{White or Red or Blue}) = \underline{\hspace{2cm}}$

$P(\text{Purple}) = \underline{\hspace{2cm}}$

**d) Given that a family has 3 children and boys and girls are equally likely, show the sample space for the possible outcomes. Then, find the probabilities requested.**

Sample Space:

a)  $P(\text{three girls}) = \underline{\hspace{2cm}}$       b)  $P(\text{Girl, Girl, Boy})$  in that order =  $\underline{\hspace{2cm}}$

c)  $P(\text{2 girls and one boy in any order}) = \underline{\hspace{2cm}}$

**e) Given the roll of 2 dice and their values are summed, what is the:**



$P(\text{sum of 10}) = \underline{\hspace{2cm}}$

$P(\text{sum of 7 or 9}) = \underline{\hspace{2cm}}$

$P(\text{odd sum or sum of 4}) = \underline{\hspace{2cm}}$

$P(\text{sum of 1}) = \underline{\hspace{2cm}}$

$P(\text{sum of a multiple of 2 or a multiple of 3}) = \underline{\hspace{2cm}}$