

**INDEPENDENT PROBABILITY**

1. Determine the following probabilities if each of the following are independent.

<b>GIVEN:</b> P(A) = 0.8	P(B) = 0.25	P(C) = 0.6
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a.  $P(A \text{ and } C) =$  Decimal:

b.  $P(A \text{ and } B \text{ and } C) =$  Decimal:

c.  $P(\text{Rolling a 4 on a standard die and } B) =$

d. Find the  $P(D)$  assuming A and D are independent events, and given  $P(A \text{ and } D) = 0.24$

Decimal:

Decimal:



e.  $P(\text{Rolling a 2 on a standard die and picking a card with a "7" on it from a standard deck of cards}) =$

Decimal:

f. If you were to roll two standard six-sided dice, what is the probability that both land on a 5 or greater?

Decimal:



g. If your chances of losing the shell game if you randomly pick is 2 in 3. What are the chances that you would lose 5 games in a row?



Decimal:

h. Assuming a baseball Freddie has a batting average of 0.305. If we assume the probability of him getting a base hit is 0.305, what is the probability that he gets 3 base hits in a row?



Decimal:

i. A weather forecaster suggests the probability of rain on Saturday is 30% and on Sunday there is a 60% chance of rain. If the forecaster's probabilities are correct what is the probability of no rain all weekend?

Decimal:



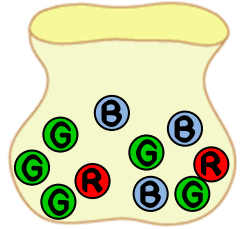
j. \*\* Nancy estimates that the probability that a tornado will strike with in the city limits on any given year is 0.75%. What is the probability of at least one tornado touching down in the next 5 years? (*must use complements*)

Decimal:



**DEPENDENT PROBABILITIES**

2. Consider an opaque bag with 5 green marbles, 3 blue marbles, and 2 red marbles.



a. If two marbles are drawn without replacement what is the probability that they are both green?

Decimal:

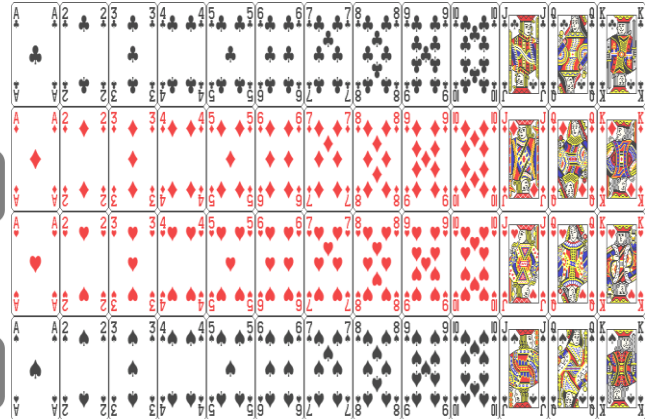
b. If two marbles are drawn without replacement what is the probability that the first draw is a red marble and the second draw is a blue marble?

Decimal:

c. \*\*\*If two marbles are drawn without replacement what is the probability that the both marbles are the same color?

Decimal:

3. Consider that 3 consecutive cards are drawn without replacement from a shuffled deck of cards (**Dependent probability**)



A. What is the probability that the first two cards drawn are face cards?

Decimal:

B. What is the probability that the all three cards are hearts?

Decimal:

C. What is the probability that all three cards are a King?

Decimal:

D. What is the probability that all three cards are the same (BONUS)?

Decimal: