Concept: Independent Events

Name:

COMPUTER COMPONENT

Instructions: In UMATH X follow the **Content Menu** path:

Probability > Independent Events

Work through all Sub Lessons of the following Lessons **in order**:

- *In This Topic*
- *What Are They?*
- *Examples*
- *Probability*
- *Patterns and Summary*

As you work through the computer exercises, you will be prompted to make notes in your notebook/math journal.

SUMMARY

When the outcome of one event has _____ effect on the outcome of another event, the events are said to be _____ events.

Complete the following Examples-

Example 1: A coin is tossed and a die is rolled at the same time. What is the probability of throwing a head or tail, and rolling a 1, 2 or 3?

Solution:

_____

_____

Example 2: Three blue balls and one red ball are placed in a box. What is the probability of removing two blue balls if each ball is replaced after it is removed?

Solution:

_____

_____

Example 3: A bag contains tiles with letters on them spelling Probability. A tile is removed and replaced, and then another tile is removed and replaced. What is the probability of pulling out a B, replacing it, then pulling out an L tile?

Solution:

NOTE: *Pattern for Independent Events*: P(A and B) = P( ) x P( )

OFF COMPUTER EXERCISES

Use your knowledge of Independent Events to find the probability for the following:

1. A coin is tossed and a die is rolled. What is the probability that...

(a) a tail was tossed and an even number was rolled?

(b) a head was tossed and a number larger than 4 was rolled?

2. A card is drawn from a normal 52 card deck. The card number and suit are noted, the card is placed back in the deck, then another card is drawn. Find the probability that...

(a) the first card was a Queen and the second card was a 10.

(b) the first card was the Queen of Hearts and the second card was an 8.

(c) both cards were Jacks.

(d) the first card was the 5 of Spades and the second card was the Ace of Hearts.

3. A bag contains tiles with letters on them spelling the word BANANA.
A tile is removed, taken note of, and then replaced. Another tile is then drawn.
Find the probability that...

(a) the first tile was a B and the second tile was an N.

(b) the first tile was an N and the second tile was an A.

4. You have three pieces of paper in an envelope. One piece of paper has the number 1 written on it, another has the number 2 written on it, and the other has the number 3 written on it. You draw and replace a piece of paper three times. What is the probability that the numbers you drew were...

(a) 1, 2, 3 (in that order)

(b) 2, 2, 2 (in that order)

5. Two cards are drawn from a standard deck of 52 playing cards, with replacement.
What is the probability that…

(a) both cards are the same color?

(b) both cards are from the same suit?

_____

_____

(c) How would your answers to parts (a) and (b) change if you did not replace cards after they were drawn?

_____

_____