

1. Determine if the two events are independent of each other.

	<u>Event #1</u>	<u>Event #2</u>		
a)	The Month	The Temperature	Independent	Not Independent
b)	Your Height	Your Weight	Independent	Not Independent
c)	The day of the week	Your hair color	Independent	Not Independent
d)	Your Age	Your height	Independent	Not Independent
e)	Your weight	Your income	Independent	Not Independent

2. Determine if the two events are independent of each other.

	<u>Event #1</u>	<u>Event #2</u>	
a)	Choosing a marble from bag #1, and then choosing a marble from bag #2.		I or NI
b)	Selecting a marble from a bag, keeping it, and then selecting another marble.		I or NI
c)	Spinning a spinner to get a blue, and then flipping a coin to get a head.		I or NI
d)	Rolling an even number on a die, and then rolling it again to get a five.		I or NI
e)	Selecting a marble from a bag, replacing it, and then selecting another marble.		I or NI

3. The given two events, Event A and Event B are independent events.

a) $P(A) = 0.4$ $P(B) = 0.3$ $P(A \text{ and } B) =$ _____	b) $P(A) = 0.76$ $P(B) = 0.11$ $P(A \text{ and } B) =$ _____
c) $P(A) = 0.2$ $P(B) = 0.2$ $P(A \text{ and } B) =$ _____	d) $P(A) = 0.55$ $P(B) = 0.1$ $P(A \text{ and } B) =$ _____

4. The given two events, Event A and Event B are independent events.

a) $P(A) = 0.4$ $P(A \text{ and } B) = .22$ $P(B) =$ _____	b) $P(A) = 0.74$ $P(A \text{ and } B) = .37$ $P(B) =$ _____
c) $P(A) = 0.85$ $P(A \text{ and } B) = .51$ $P(B) =$ _____	d) $P(A) = 0.9$ $P(A \text{ and } B) = .45$ $P(B) =$ _____

5. Determine if the following are independent or not.

a) $P(A) = 0.55$ $P(B) = 0.20$ $P(A \text{ and } B) = 0.11$	Independent	Not Independent
b) $P(A) = 0.40$ $P(B) = 0.60$ $P(A \text{ and } B) = 0.24$	Independent	Not Independent
c) $P(A) = 0.7$ $P(B) = 0.45$ $P(A \text{ and } B) = 0.4$	Independent	Not Independent
d) $P(A) = 0.5$ $P(B) = 0.5$ $P(A \text{ and } B) = 0.35$	Independent	Not Independent

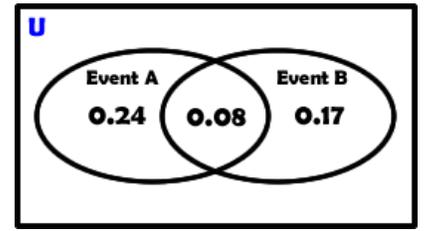
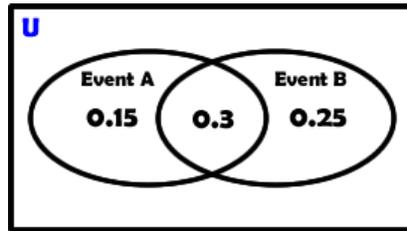
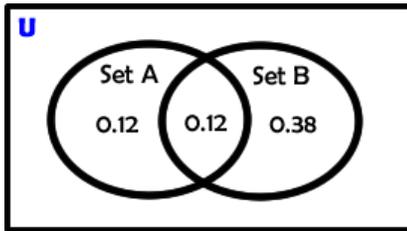
6. Travis says to a friend, I understand independence; it is when you have no elements in common. Is he correct? Explain.

7. Determine if the following events are independent or not.

a) Independent or Not Independent

b) Independent or Not Independent

c) Independent or Not Independent



8. Determine if the event is independent or not, if the event is independent determine the probability of it happening.

a) A bag of marbles has 3 red and 6 green marbles. What is the probability of selecting two red with replacement?

Independent or Not Independent

If independent, $P(R \text{ and } R) = \underline{\hspace{2cm}}$

b) A bag of marbles has 3 red, 1 green and 7 yellow marbles. What is the probability of selecting a green and then a yellow with replacement?

Independent or Not Independent

If independent, $P(G \text{ and } Y) = \underline{\hspace{2cm}}$

c) There are two bags of marbles, in Bag #1, there are 3 red and 2 green, and in Bag #2, there are 2 red and 6 green. What is the probability of selecting a green from Bag #1, and a red from Bag #2?

Independent or Not Independent

If independent, $P(G \text{ and } R) = \underline{\hspace{2cm}}$

d) A bag of marbles has 1 red, 1 green and 3 yellow marbles. What is the probability of selecting a yellow and then a yellow without replacement?

Independent or Not Independent

If independent, $P(Y \text{ and } Y) = \underline{\hspace{2cm}}$

e) Given a standard deck of cards. What is the probability of selecting a jack and then an ace without replacement?

Independent or Not Independent

If independent, $P(J \text{ and } A) = \underline{\hspace{2cm}}$

f) A spinner has four equal color (Red, Green, Yellow, Blue) quadrants and a die has 12 sides. What is the probability of getting blue on the spinner and a factor of 12 on the die?

Independent or Not Independent

If independent, $P(B \text{ and } F) = \underline{\hspace{2cm}}$

g) You roll one sixed sided dice twice. What is the probability of getting a six and then a value less than 3?

Independent or Not Independent

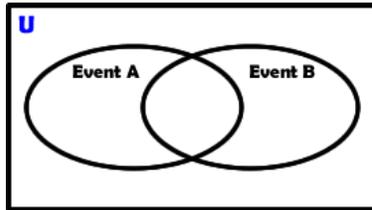
If independent, $P(S \text{ and } L) = \underline{\hspace{2cm}}$

9. How does the term replacement help keep events independent of each other?

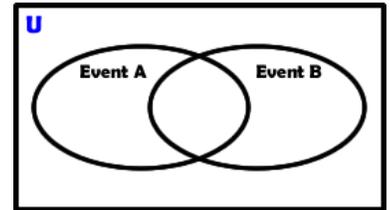
10. Why can't $P(A \text{ and } B)$ ever be greater than $P(A)$?

11. Events A and Event B are independent. Complete the Venn diagram and determine the probability.

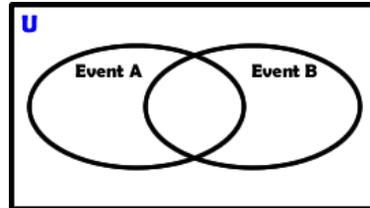
- a) $P(A \text{ and } B) = 0.3$
 $P(A \text{ and Not } B) = 0.2$
 $P(A) =$ _____
 $P(B) =$ _____



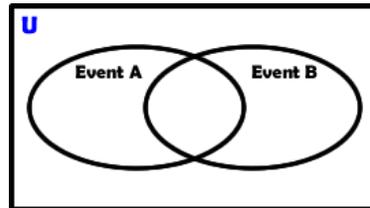
- b) $P(A \text{ and } B) = 0.22$
 $P(B \text{ and Not } A) = 0.18$
 $P(B) =$ _____
 $P(A) =$ _____



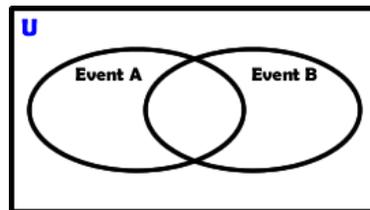
- c) $P(A \text{ and } B) = 0.6$
 $P(A \text{ and Not } B) = 0.2$
 $P(A) =$ _____
 $P(B) =$ _____
 $P(B \text{ and Not } A)?$ _____



- d) $P(A \text{ and } B) = 0.4$
 $P(A) = 0.5$
 $P(B) =$ _____
 $P(B \text{ and Not } A)?$ _____
 $P(\text{Not } A \text{ and Not } B)?$ _____



- e) $P(A) = 0.32$
 $P(B) = 0.25$
 $P(A \text{ and } B)?$ _____
 $P(B \text{ and Not } A)?$ _____
 $P(A \text{ and Not } B)?$ _____



- f) $P(A \text{ and } B) = 0.2$
 $P(B) = 0.8$
 $P(A)?$ _____
 $P(B \text{ and Not } A)?$ _____
 $P(A \text{ and Not } B)?$ _____

