

## Warm-Up



1. Put your phones away.
2. Take out your classwork/homework from yesterday to go over it.

## **What am I learning today?**

### **Learning Objective 6.2**

How to calculate 'AND' probability.

**'AND' probability** - The **PROBABILITY** which **MULTIPLE** events are likely to occur

$$P(A \text{ and } B) = P(A) * P(B)$$

\*\*Written as fractions first!

Two possibilities:

- **Independent Events** - Events which the first event **DOESN'T** effect the rest of the events

\*\*\*Worded as **WITH** replacement\*\*\*

- **Dependent Events** - Events which the first event **DOES** effect the rest of the events

\*\*\*Worded as **WITHOUT** replacement\*\*\*

1. If the  $P(A) = 0.3$  and the  $P(B) = 0.5$ , what is the  $P(A \text{ and } B)$ ?

$$(0.3)(0.5) = 0.15$$

2. If the  $P(A) = 0.1$  and  $P(A \text{ and } B) = 0.05$  (CHANGE), what is  $P(B)$ ?

$$\frac{(0.1)x}{0.1} = \frac{0.05}{0.1}$$

$$x = 0.5$$

3. If your chances of losing a cup game is 2 in 3. What are the chances that you will lost 5 games in a row?

$$(1) \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3} = \left(\frac{2}{3}\right)^5$$

$$\frac{32}{243} \text{ OR } 13.2\%$$

4. If the Atlanta Hawks free throw percentages is 82%, what is the probability that a player for the Hawks will make 2 free throw shots in a row?

$$(1) (0.82)(0.82) = 0.6724$$

$$\text{OR } 67.24\%$$

5. P(rolling a number less than 4 and flipping a tail)

$$(I) \quad \frac{3}{6} \cdot \frac{1}{2} = \frac{1}{4} \text{ OR } 25\%$$

6. P(rolling a 3 on a die and picking a face card from a standard deck of cards)

$$(I) \quad \frac{1}{6} \cdot \frac{12}{52} = \frac{1}{26} \text{ OR } 3.8\% \quad \{J, Q, K\} \cdot 4$$

7. P(rolling a 6  $\cap$  rolling a 2)

$$(I) \quad \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36} \text{ OR } 2.8\% \quad \text{'AND'}$$

8. You decide to choose a card replace it, shuffle the deck, and pick another card. What is the probability that you chose a King and then chose an even card?

$$(I) \quad \frac{4}{52} \cdot \frac{20}{52} = \frac{5}{169} \text{ OR } 3\% \quad \{2, 4, 6, 8, 10\} \cdot 4$$

9. A bag contains 1 blue marble, 8 red marbles, and 7 yellow marbles. You decided to draw 3 marbles and place them on the counter. What is the probability of drawing all red marbles?

$$(D) \quad \frac{8}{16} \cdot \frac{7}{15} \cdot \frac{6}{14} = \frac{1}{10} \text{ OR } 10\%$$

10. You decide to choose a 2 cards back to back. What is the probability that you chose Jack of Clubs and then chose a Lettered card?

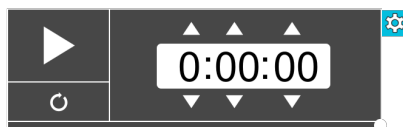
$$(D) \quad \frac{1}{52} \cdot \frac{15}{51} = \frac{5}{884} \text{ OR } 0.6\% \quad \{A, J, Q, K\} \cdot 4$$

11. A cooler contains 12 bottles of Gatorade: 3 lemon-lime, 4 orange, and 5 fruit-punch flavored. You randomly grab 3 bottles one a time for you and your friends. What is the probability of choosing a lemon-lime first, fruit-punch second, and orange third?

$$(D) \quad \frac{3}{12} \cdot \frac{5}{11} \cdot \frac{4}{10} = \frac{1}{22} \text{ OR } 4.5\%$$

12. You went to animal shelter and saw 7 male puppies, 3 female puppies, 2 female kittens, and 4 male kittens. What is the probability of you choosing 2 male puppies and 1 female kitten?

$$(D) \quad \frac{7}{16} \cdot \frac{6}{15} \cdot \frac{2}{14} = \frac{1}{40} \text{ OR } 2.5\%$$

**Classwork:**

Complete the classwork about 'AND' probability.

***Take out your EOC packet to start going over the problems.***

**HW:** Finish your classwork and study for the EOC