

Daily Agenda

Learning Targets: I can determine if an event is mutually exclusive. I can calculate the probability of mutually exclusive events.

Homework
10.2 Day 2 WS

Assessments
10.1-10.2 Quiz 4/27
Unit 10 A Test - 5/5

Do not let what you cannot do interfere with what you can do.
-John Wooden

Nov 15-8:24 PM

Determine if the two events are independent or dependent. Then, calculate the probability.

A jar contains 15 quarters and 5 nickels. If 2 coins are chosen at random, what is the probability of getting 2 quarters?

$\frac{15}{20} \cdot \frac{14}{19}$ dependent

$\frac{3}{4} \cdot \frac{14}{19} = \frac{21}{38}$

Mar 22-8:52 PM

Determine if the two events are independent or dependent. Then, calculate the probability.

A coin is tossed and a single 6-sided die is rolled. Find the probability of landing on the tails side of the coin and rolling a 4 on the die.

$\frac{1}{2} \cdot \frac{1}{6} = \frac{1}{12}$ independent

Mar 22-10:03 PM

Determine if the two events are independent or dependent. Then, calculate the probability.

A card is chosen at random from a standard deck of 52 cards. It is then replaced and a second card is chosen. What is the probability of choosing a Jack first and a 3 second?

$\frac{4}{52} \cdot \frac{4}{52}$ independent

$\frac{1}{13} \cdot \frac{1}{13} = \frac{1}{169}$

Mar 22-9:29 PM

Determine if the two events are independent or dependent. Then, calculate the probability.

There are 4 red, 8 yellow and 6 blue socks in a drawer. Once a sock is selected, it is not replaced. Find the probability that 2 blue socks are chosen.

$\frac{6}{18} \cdot \frac{5}{17} = \frac{5}{51}$ dependent

$(\frac{1}{3}) \cdot \frac{5}{17}$

Mar 23-7:33 AM

The teacher of a class that contains 12 boys and 16 girls needs to pick two volunteers. She randomly selects one student, and then selects another student from the class. Find the probability that...

1) She chooses a girl first, then a boy.

$\frac{16}{28} \cdot \frac{12}{27} = \frac{16}{63}$

2) She chooses two boys.

$\frac{12}{28} \cdot \frac{11}{27} = \frac{11}{63}$

Mar 22-9:27 PM

You randomly select two cards from a standard deck of 52 cards. What is the probability that the first card is not a heart and the second is a heart if...

- 1) You replace the first card before selecting the second.
- 2) You do not replace the first card.

Mar 22-9:27 PM

10.2 Probability of Multiple Events

Mutually Exclusive Events

Two events that **CANNOT OCCUR** at the same time.

If two events are mutually exclusive, the $P(A \text{ and } B) = 0$.

If events A and B are mutually exclusive, the probability that either **A or B** will occur is determined by **adding** their individual probabilities.

Feb 9-11:33 AM

Determine whether the outcomes of each trial are mutually exclusive.

1. A student is enrolled in math 7th period; a student is enrolled in science during 7th period. *Mut. Exclusive*
2. One fair number cube is rolled. You roll an even number; you roll a multiple of 3. *Not Mut. Exclusive*
3. Two fair number cubes are rolled. The numbers are equal; the sum is odd. *Mut. Exclusive*

Mar 22-9:13 PM

Determine whether the outcomes of each trial are mutually exclusive.

4. You land on an even number; you land on blue. *Mut. Excl.*
5. You land on a number greater than 5; you land on yellow. *Not Mut. Exclusive*

Not Mut. Exclusive



Mar 22-9:13 PM

Probability of A or B

If the events are Mutually Exclusive

$$P(A \text{ or } B) = P(A) + P(B)$$

If the events are NOT Mutually Exclusive

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

Mar 22-9:57 PM

Example

You have a standard deck of cards.

- a) What is the probability of selecting a king or a queen? Leave answer as a simplified fraction.

$$\frac{4}{52} + \frac{4}{52} = \frac{2}{13}$$

- b) What is the probability of selecting a diamond or a face card? Leave answer as a simplified fraction.

$$\frac{13}{52} + \frac{16}{52} - \frac{4}{52} = \frac{25}{52}$$

Mar 22-9:29 PM

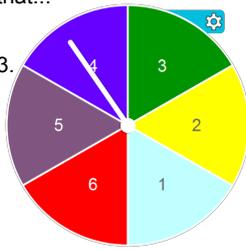
It is equally likely that the pointer will land on any one of the six regions. Find the probability that...

- a) The pointer will stop on an even number or a number greater than 3.

$$\frac{3}{6} + \frac{3}{6} - \frac{2}{6} = \frac{2}{3}$$

- b) The pointer will stop on an odd number or a number less than 5.

$$\frac{3}{6} + \frac{4}{6} - \frac{2}{6} = \frac{5}{6}$$



Mar 22-10:03 PM

A bag contains 5 red marbles, 1 blue marble, 3 yellow marbles, and 2 green marbles. One marble is drawn from the bag. What is the probability that the marble is red or yellow?

$$\frac{5}{11} + \frac{3}{11} = \frac{8}{11}$$

Mar 23-7:33 AM

You are dealt one card from a 52-card deck. Find the probability that...

- a) You are dealt a 2 or a 3.

$$\frac{4}{52} + \frac{4}{52} = \frac{8}{52} = \frac{2}{13}$$

- b) You are dealt a 7 or a red card.

$$\frac{4}{52} + \frac{26}{52} - \frac{2}{52} = \frac{28}{52} = \frac{7}{13}$$

- c) You are dealt a red 7 or a black 8.

$$\frac{2}{52} + \frac{2}{52} = \frac{4}{52} = \frac{1}{13}$$

Mar 23-10:07 PM

Apr 25-8:01 AM