

DEPENDENT EVENTS

When the outcome of one event impacts the outcome of another, it is a dependent event.

Read each situation below and determine if it is an independent or a dependent event.

- independent 1. Flipping two coins results in one landing on heads and one landing on tails.
- dependent 2. The captain of the football team is selected and then the co-captain is selected.
- dependent 3. You draw a joker from a deck of cards, and then you draw an ace.
- independent 4. You draw a queen from a deck of cards, replace it, and then draw a 10.
- independent 5. A coin is flipped and a number cube is rolled.

**INDEPENDENT
PROBABILITY**

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

**DEPENDENT
PROBABILITY**

$$P(A \text{ and } B) = \underline{P(A)} \cdot \underline{P(B \text{ after } A)}$$

Use your understanding of independent events and dependent events to answer the questions below.

6. Neil goes to the pet shop and selects a treat for his dog. He chooses one and then chooses another. What is the probability that Neil selects a bone and then a ball?



$$\frac{3}{7} \cdot \frac{2}{6} = \frac{1}{7}$$

bone ball

7. Mackenzie chooses one candle and then chooses another candle. What is the probability that Mackenzie selects a polka dot candle both times?

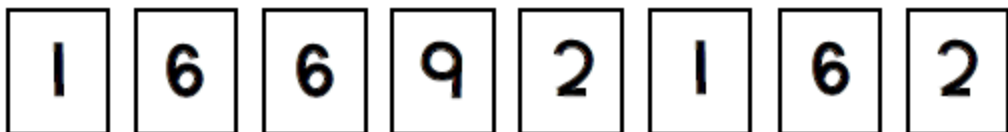


$$\frac{2}{5} \cdot \frac{1}{4} = \frac{1}{10}$$

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Use the details about the game to answer the questions below.

In a board game, students draw a number, do not replace it, and then draw a second number. Determine the probability of each event occurring.



1. Drawing an odd number, then drawing a 6	2. Drawing a 2, then drawing another 2	3. Drawing a number divisible by 3, then drawing a 1
$\frac{9}{56}$	$\frac{1}{28}$	$\frac{1}{7}$
4. Drawing a 1, then drawing a 6	5. Drawing a prime number, then drawing a composite number	6. Drawing a 9, then drawing another 9
$\frac{3}{28}$	$\frac{1}{7}$	0
7. Drawing a 9, then drawing a number divisible by 1	8. Drawing an even number, then drawing 1	9. Drawing a 6, then drawing an odd number
$\frac{1}{8}$	$\frac{5}{28}$	$\frac{9}{56}$

Choose the best answer below for question 10.