

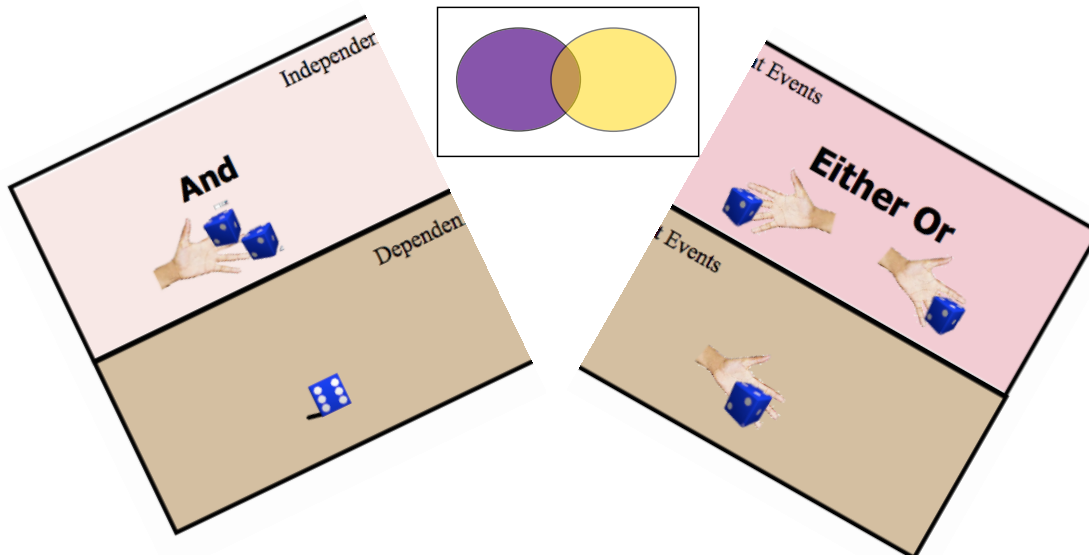


Can you think of a single outcome that satisfies the probabilities of two separate events?

## Introductory Probability

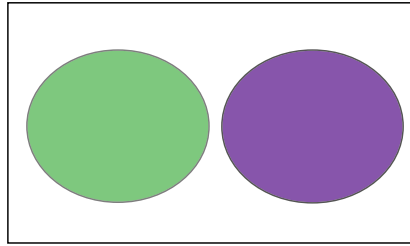
Types & terminology | Basic formula | Activating prior learning | Sum and product rule | Independent AND| OR | Venn Diagrams | Dependent Probability

### Venn Diagrams



Venn Diagrams

Cats  
Dogs



Computer Mouse  
Chair

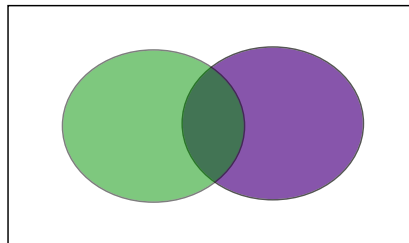
Hammers  
Nails

Mukluk  
Gazebo

Things that have nothing in common are mutually exclusive.  
Their circles will not overlap in a Venn Diagram.

Venn Diagrams

Peanut Butter Treats  
Chocolate Treats



Data Students  
Economics Students

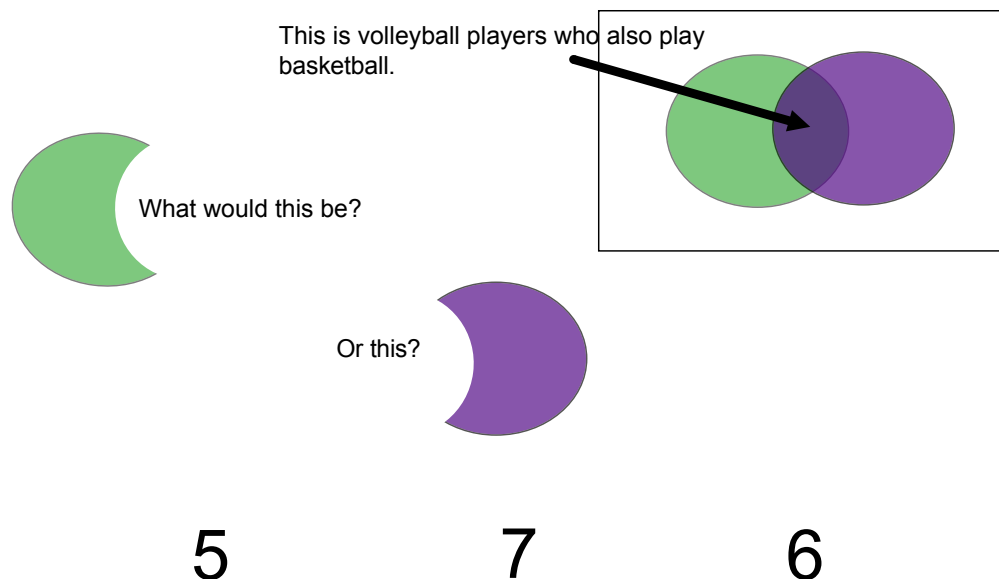
Father  
Brother

Liquid  
Metal

What are elements that belong to both sets?

What are elements that belong to only one set?

At Iroquois Ridge, there are 12 players on the school basketball team, and 11 players on the volleyball team. How many players could show up at a party for both teams if exactly 5 students play on both teams? Model the problem using a Venn Diagram.



1. Classify each pair of events as mutually exclusive or non-mutually exclusive.

**Event A**

- a) Randomly drawing a grey sock from a drawer
- b) Randomly selecting a student with brown eyes
- c) Having an even number of students in your class
- d) Rolling a six with a die
- e) Your birthday falling on a Saturday next year
- f) Getting an A on the next test
- g) Calm weather at noon tomorrow
- h) Sunny weather next week

**Event B**

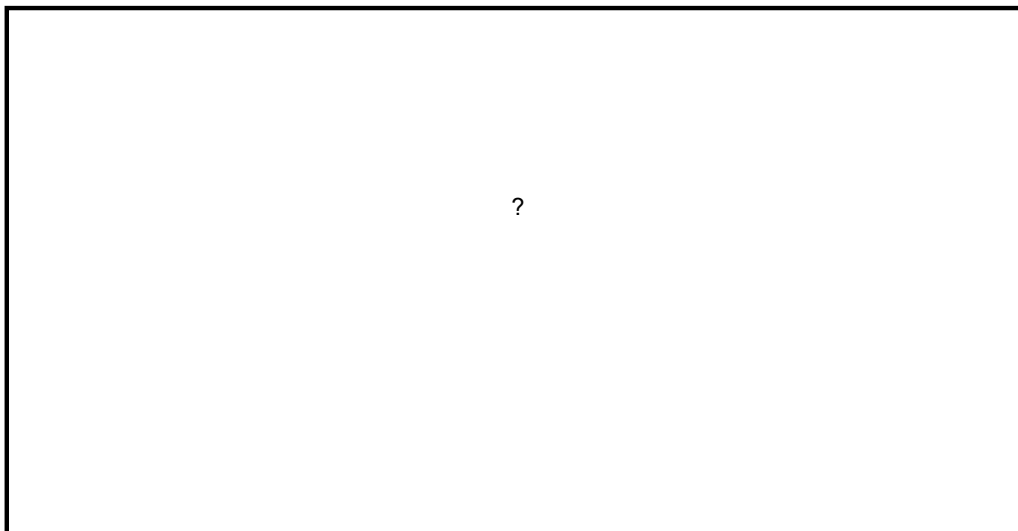
- Randomly drawing a wool sock from a drawer
- Randomly selecting a student on the honour roll
- Having an odd number of students in your class
- Rolling a prime number with a die
- Your birthday falling on a weekend next year
- Passing the next test
- Stormy weather at noon tomorrow
- Rainy weather next week

2. A certain provincial park has 220 campsites. A total of 80 sites have electricity. Of the 52 sites on the lakeshore, 22 of them have electricity. If a site is selected at random, what is the probability that

- a) It will be on the lakeshore?
- b) It will have electricity?
- c) It will either have electricity only or be on the lakeshore only?
- d) It will be on the lakeshore and not have electricity?

3. A market-research firm monitored 1000 television viewers, consisting of 800 adults and 200 children, to evaluate a new comedy series that aired for the first time last week. Research indicated that 250 adults and 148 children viewed some or all of the program. If one of the 1000 viewers was selected, what is the probability that

- a) The viewer was an adult who did not watch the new program?
- b) The viewer was a child who watched the new program?
- c) The viewer was an adult or someone who watched the new program?
- d) What would this Venn Diagram look like? (Hint: Venn's don't always have to be circles).



## Quiz

## Answer Key

- 1a). non-mutually exclusive
- b). non-mutually exclusive
- c). mutually exclusive
- d). mutually exclusive
- e). non-mutually exclusive
- f). non-mutually exclusive
- g). mutually exclusive
- h). non-mutually exclusive

- 2a). ~23.6%
- b). ~36.4%
- c). 40%
- d). ~13.6%

- 3a). 55%
- b). 14.8%
- c). 94.8%
- d). answers vary