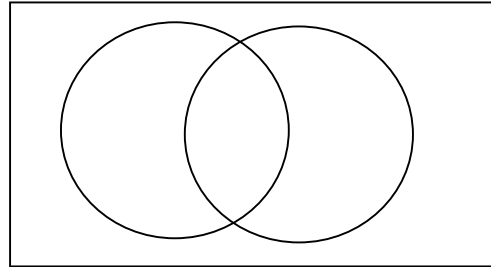
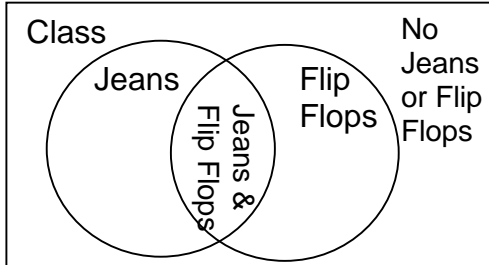


Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

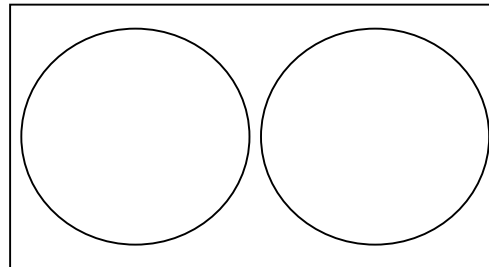
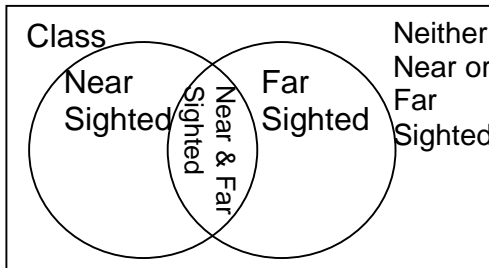
## Compound Events Notes

Count the number of students in the class that fit into each part of the Venn Diagrams:

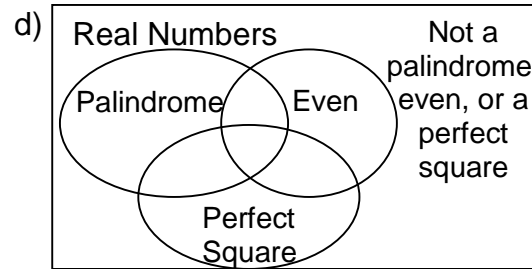
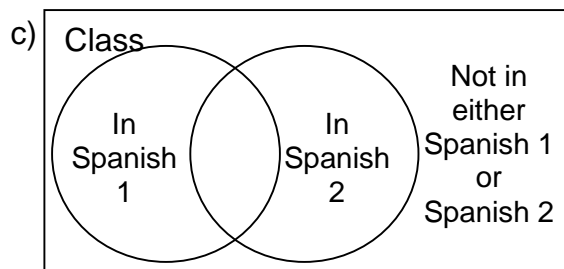
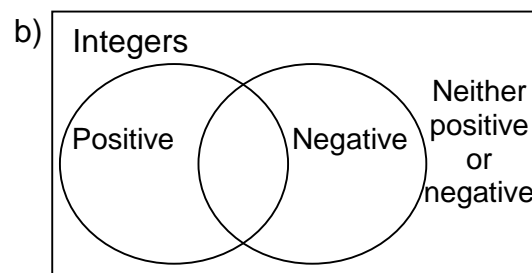
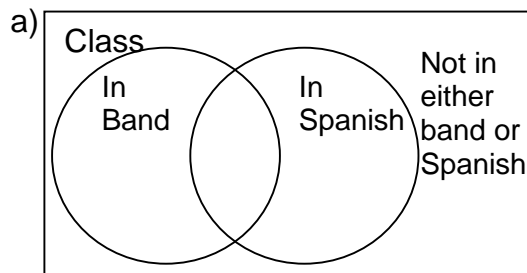
**Inclusive Events** - Two events that can both happen at the same time



**Mutually Exclusive Events** - Two events that CANNOT both happen at the same time



1. Which kind of events are shown between each oval - Inclusive or Mutually Exclusive?  
(Try to give an example item that would fit in each overlapping section.)



Determining whether events are mutually exclusive - without a Venn Diagram. Try to think of examples or counterexamples to help decide - can both events happen at the same time?

2. Determine if the following events A and B are mutually exclusive events if a pair of fair dice are rolled.

a) A = The sum of the two dice is 2, 4, 7 and B = the sum is even

b) A = The sum of the dice is 5 and B = the sum of the dice is even

c) A = One die rolled a 5 and B = the sum of the dice is 7

d) A = Doubles are rolled and B = the sum is 7

e) A = Doubles are rolled and B = the sum is 8

3. Determine if the following events A and B are mutually exclusive if you are picking a card at random out of a shuffled deck of cards.

a) A = Club and B = Heart

b) A = Diamond and B = Red

c) A = Jack and B = Ace

d) A = King and B = Spade

### Finding probabilities of compound events

**OR = Addition Rule:  $P(A \cup B) = P(A) + P(B) - P(A \cap B)$**

Watch out for the notation! OR: $\cup$ AND: $\cap$
---

You are picking ONE card at random out of a shuffled deck. Find the probability you pick the following cards. Be careful not to double count cards when you see "OR". Reduce fractions!

a)  $P(\text{Club} \cap \text{Heart}) =$

b)  $P(\text{Club} \cup \text{Heart}) =$

c)  $P(\text{Queen} \cap \text{Spade}) =$

d)  $P(\text{Queen} \cup \text{Spade}) =$

e)  $P(\text{Face Card} \cap \text{Club}) =$

f)  $P(\text{Face Card} \cup \text{Club}) =$

g)  $P(\text{Red 2} \cup \text{Diamond}) =$

h)  $P(\text{Queen} \cup \text{not a Red Card}) =$