1. The odds in favour of Pi knocking over her water dish are 3:7. What are the odds against her knocking her water dish over?

2. Dogs at a dog park were asked what items they like to play fetch with. 21 out of 30 dogs said they liked playing with frisbees. What are the odds against a dog liking to play with frisbees?

3. There are three new games at the fair this year. The odds against winning each game are:

   Lazy Susan 8:3

   Rowdy Rays 5:2

   Bird Balloon 7:4

   If you played all three games, which would you be most likely to win?

4. $S = \{x | x \leq 16, x \in N\}$

   Numbers representing elements of the set S are written on pieces of paper and put in a hat. If one piece of paper is pulled randomly from the had, what is the probability that number is divisible by 3 or divisible by 4? A Venn Diagram can be used to show the numbers of set S.

### Set S: Natural numbers ≤ 16
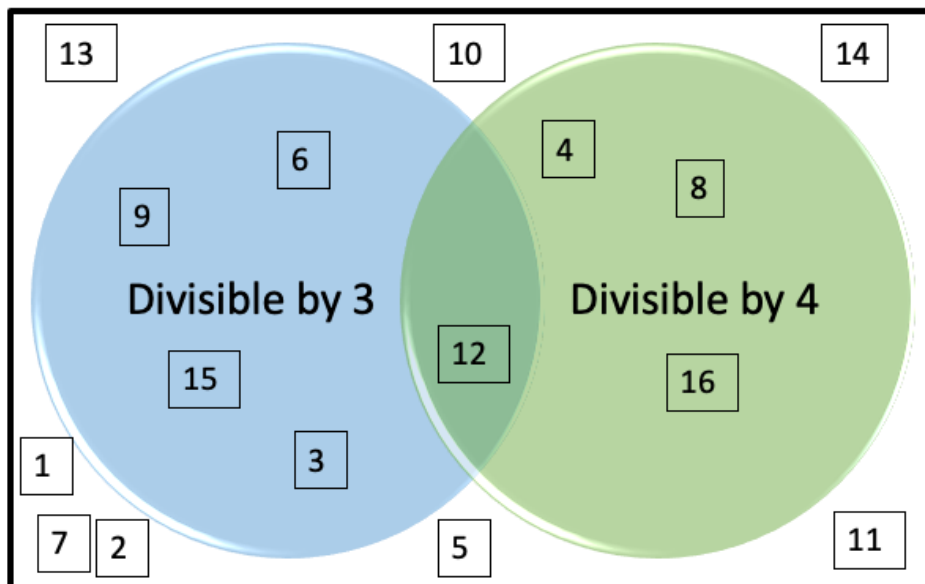
5. The probability of Mike scoring in a hockey game is 41%. The probability of both Roger and Mike scoring in a game is 35%, The probability of either Mike or Roger scoring in a game is 63%.

a) What is the total probability of Roger scoring in a game?

b) What is the probability that Mike scores in a game and Roger does not?

c) What is the probability that Roger scores in a game and Mike does not?

6. You draw a card from a deck. What is the probability that card will be a face card or a 5?

7. On weekday mornings, the probability of Pi jumping on the bed is 80%. How many weekdays per week does she **not** jump on the bed?

8. Three possible outcomes of rolling a six-sided die are shown below:
   A. A number less than 4
   B. A number greater than 3
   C. An odd number

a) Which two outcomes are mutually exclusive?

b) Group together and list the outcomes that are not mutually exclusive to each other.

9. The probability that the Jaguars sports team will win their first game of the tournament is 65%. If they win, they will have high morale and are 85% likely to win their second game as well. However, if they lose their first game then there is only a 30% chance they will win their second game.

a) What is the probability they lose both their games?

b) What is the probability they win one game and lose one game, in any order?

c) If their positive attitude remains unchanged after winning or losing the first game, they will again have a 65% chance of winning the second game. What is the probability they still lose both games?

10. There are 12 students in a debate team. Two students are in grade 10, six students are in grade 11 and four students are in grade 12. On debate day, a group of five students will be randomly chosen to represent the team on stage. What is the probability three students will be in grade 11 and two students will be in grade 12?