

**1.** Assuming that births are equally likely on any day of the week, find the probability that the next person you meet was born on a weekday.

**2.** One letter is selected at random from the word 'UNNECESSARY'. Find the probability of selecting:

- a)** an R;
- b)** an E;
- c)** an O.

**3.** A die is thrown once. Find the probability of obtaining:

- a)** an even number;
- b)** a four;
- c)** a factor of 12;
- d)** a number less than 3.

**4.** A 50c and a 10c coin are tossed at the same time. Find the probability of obtaining:

- a)** two tails;
- b)** a head and a tail;
- c)** two heads.

**5.** A card is selected at random from an ordinary pack of 52 cards. Find the probability that the card is

- a)** a king
- b)** a heart
- c)** the king of hearts
- d)** either a king or a heart

**6.** A card is selected at random from a pack of 52 cards. Find the probability that the card is

- a)** black
- b)** an honour [aces, kings, queens and jacks are honours]
- c)** a black honour
- d)** either black or an honour

7. In a bag are 100 discs numbered 1 to 100. A disc is selected at random from the bag. Find the probability that the number on the selected disc is

- a) even
- b) a multiple of five
- c) a multiple of ten
- d) either even or a multiple of five

8. Two fair dice are thrown. Find the probability that one of the dice shows a *four* given that the total on two dice is *ten*.

9. Find the probability that one of the dice shows a two given that the total on the two dice is six.

10. Find the probability that one of the dice shows a *three* given that the total on the two dice is *seven*.

11. Find the probability that the scores on each of the two dice are the same given that the total on the two dice is *four*.

12. Find the probability that the total on the two dice is *eight* given that neither die shows a *five*.

13. A fair coin is thrown twice. Find the probability that the result is a head and a tail, in either order.

14. A bag contains seven red cards and three blue cards. Two cards are selected at random

- a) Represent this information on a tree diagram.
- b) Find the probability that both cards are the same colour

15. Another bag also contains seven red cards and three blue cards. This time a card is selected and replaced. A second card is then selected.

- a) Represent this information on a tree diagram.
- b) Find the probability that the cards are a different colour.

**16.** A box contains six white balls and four black balls. Three balls are selected at random

- a) Represent this information on a tree diagram.
- b) Find the probability that two of the selected balls are white and the other is black

**17.** Two sacks, A and B, each contain a mixture of a plastic and leather rugby balls. Sack A contains four plastic balls and two leather balls, and sack B contains three plastic balls and five leather balls. A sack is selected at random and a ball is taken from it.

- a) Represent this information on a tree diagram.
- b) Calculate the probability that the ball is leather