

# Statistical distributions



## Gold

A fair five-sided spinner has its sides numbered 1 to 5. The random variable  $S$  represents the score when the spinner is spun.

Finn and Will play a game with this spinner. The spinner is spun repeatedly and  $S$  points are awarded on the outcome of each spin. If  $S$  is even then Finn receives the points and if  $S$  is odd then Will receives them. The first player to collect 10 or more points is the winner.

- a** Find the probability that Will wins after exactly 2 spins.
- b** Find the probability that Finn wins after exactly 3 spins.

## Silver

A fair four-sided spinner has its sides numbered 1 to 4. The random variable  $S$  represents the score when the spinner is spun.

Sarah and Emily play a game with this spinner. The spinner is spun repeatedly and  $S$  points are awarded on the outcome of each roll. If  $S$  is even then Sarah receives the points and if  $S$  is odd then Emily receives them. The first player to collect 10 or more points is the winner.

- a** List all the possible combinations of scores that would lead to Sarah winning after exactly 3 spins.
- b** Find the probability that Sarah wins after exactly 3 spins.

## Bronze

A fair five-sided spinner has its sides numbered 1 to 5. The random variable  $S$  represents the score when the spinner is spun.

- a** Write down the probability distribution for  $S$  using a table.
- b** State the name of this probability distribution.

