



ALL IN ONE PLACE BASE CAMP MATHS WORKSHEET PROBABILITY 1



INSTRUCTIONS

- You should take about 15 minutes to do the exercises
- Ask a family member or teacher for help if you need it
- Write your answers of the worksheet and show working out
- Use the solution sheet to check your work

WHAT TO DO

You'll do these exercises on probability

JUMP 1 *work out probabilities using spinners*

JUMP 2 *work out probabilities using dice*

JUMP 3 *decide on event likelihood*

JUMP 4 *compare probability and odds*



JUMP 1

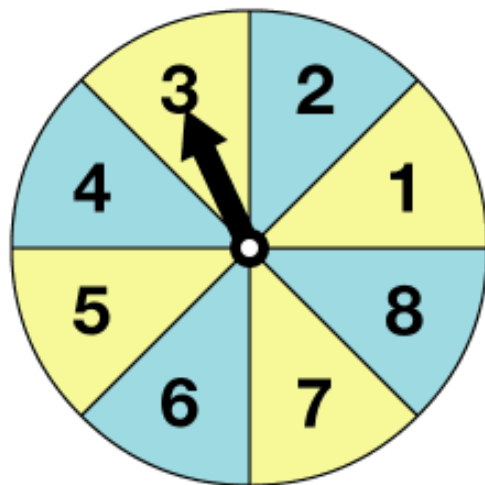


JUMP 1

Use the spinner to complete the probability table on the next page.

Write your answers as either

- fractions in the simplest form
- a decimal to two places





| What is the probability of spinning | The probability is |
|-------------------------------------|--------------------|
| an even number, fraction | |
| an odd number, decimal | |
| a prime number, fraction | |
| a prime number, decimal | |
| a number less than 4, fraction | |
| a number greater than 3, decimal | |
| a multiple of 2, fraction | |
| a factor of 9, decimal | |
| a square number, fraction | |
| a cube number, decimal | |

 **JUMP 2**

a. You roll one dice. What is the probability of getting a six?

ANSWER _____

b. You roll one dice. What is the probability of getting an odd number?

ANSWER _____

c. You roll one dice. What is the probability of getting a prime number?

ANSWER _____

d. You roll one dice and get a five. What is the probability of getting a five when you roll the dice again?

ANSWER _____

e. What is the probability of getting the numbers shows on the top faces of the dice in the picture?

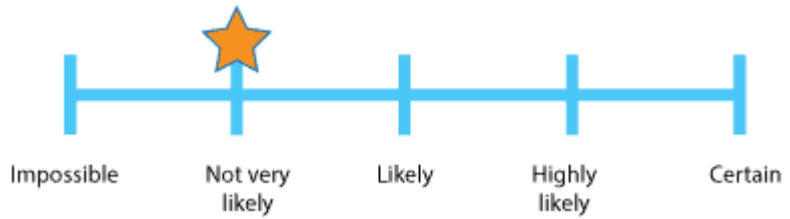
ANSWER _____





JUMP 3

The star on the probability line shows the probability of it snowing in Cairo.



Use the words from the line to decide on the probability of the events in the table. You need to use all the words; one of them you'll need to use twice. Note that **likely** means there is an **even** chance.

| Event | Probability |
|--|-------------|
| winning first prize in the lottery | |
| winning £10 in the lottery | |
| snow in Moscow during winter | |
| tossing a coin and getting tails | |
| the Earth rotating once in 24 hours | |
| global warming melting the Antarctic by 2020 | |



JUMP 4

You are going to answer questions about the odds of an event happening. Odds are different from probability.

Probability tells us the chance of something happening compared to all the possible outcomes. For example, the probability of rolling a six using a dice is 1 in 6 or $1/6$

Odds tell us the chances for and against something happening. For example, the odds of rolling a six using a dice is 1 in 5 or $1/5$





Write the odds for each event in the table. Express the odds as fractions.

| Event | Odds |
|--|------|
| getting heads when flipping a coin | |
| using a dice and rolling a number less than 3 | |
| the odds of drawing a colour card from a 52 card deck | |
| the odds of drawing an ace from a 52 card deck | |
| If the probability of winning is $\frac{7}{12}$, the odds are | |
| If the probability of losing is $\frac{5}{19}$, the odds are | |

SOLUTIONS



JUMP 1

| What is the probability of spinning | The probability is |
|-------------------------------------|--------------------|
| an even number, fraction | $\frac{1}{2}$ |
| an odd number, decimal | 0.5 |
| a prime number, fraction | $\frac{1}{2}$ |
| a prime number, decimal | 0.5 |
| a number less than 4, fraction | $\frac{3}{8}$ |
| a number greater than 3, decimal | 0.63 |
| a multiple of 2, fraction | $\frac{1}{2}$ |
| a factor of 9, decimal | 0.25 |
| a square number, fraction | $\frac{1}{8}$ |
| a cube number, decimal | 0.13 |



JUMP 2

- $\frac{1}{6}$ or 1 in 6
- $\frac{1}{2}$ or 0.5 or 3 in 6
- $\frac{1}{2}$ or 0.5 or 3 in 6
- $\frac{1}{6}$ or 1 in 6, the probability doesn't change but the event is less likely
- $\frac{1}{36}$ the probability of getting 6 = $\frac{1}{6}$ and getting 4 = $\frac{1}{6}$ so $\frac{1}{6} \times \frac{1}{6} = \frac{1}{36}$



JUMP 3

| Event | Probability |
|--|------------------------|
| winning first prize in the lottery | <i>not very likely</i> |
| winning £10 in the lottery | <i>not very likely</i> |
| snow in Moscow during winter | <i>highly likely</i> |
| tossing a coin and getting tails | <i>likely/even</i> |
| the Earth rotating once in 24 hours | <i>certain</i> |
| global warming melting the Antarctic by 2020 | <i>impossible</i> |



JUMP 4

| Event | Odds |
|---|-------|
| getting heads when flipping a coin | 1/1 |
| using a dice and rolling a number less than 3 | 2/4 |
| the odds of drawing a colour card from a 52 card deck | 12/40 |
| the odds of drawing an ace from a 52 card deck | 4/48 |
| If the probability of winning is 7/12, the odds are | 7/5 |
| If the probability of losing is 5/19, the odds are | 5/12 |