

Summer Term Maths Year 10

Day 1

Week 9

Use the fact that probabilities sum to 1

1 The probability of rolling a 4 on a die is $\frac{1}{6}$

What is the probability of not rolling a 4? $\frac{5}{6}$

2 The probability of getting a tail on a biased coin is 0.42

What is the probability of getting a head? $1 - 0.42 = 0.58$

3 Jack is playing a game.

$P(\text{Jack wins}) = 0.2$

$P(\text{Jack loses}) = 0.7$

What is $P(\text{Jack draws})$?



$$1 - (0.2 + 0.7) = 0.1$$

4 The probability that Simon gets Maths homework is x

What is the probability that Simon does not get Maths homework? $1 - x$

5 The table shows the probabilities of students being picked at random from each year group.

Year 7	Year 8	Year 9	Year 10	Year 11
0.3	0.15	0.1	0.05	x

Find following probabilities.

a) $P(\text{Year 11})$ 0.4

b) $P(\text{Year 7 or year 8})$ 0.45

c) $P(\text{Not Year 9})$ $1 - 0.1 = 0.9$

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Use the fact that probabilities sum to 1

6 A bag contains 6 red marbles, 4 blue marbles and 5 green marbles. One marble is chosen at random. Find the following probabilities.

a) $P(\text{Red}) = \frac{6}{15} = \frac{2}{5}$

b) $P(\text{Blue or Red}) = \frac{10}{15} = \frac{2}{3}$

c) $P(\text{not Green}) = \frac{10}{15} = \frac{2}{3}$

What do you notice about your answers to part b) and c)?

The answers are the same. "Blue or Red" is the same as "Not Green" as there are no other options.

7 Design a spinner with the colours "Red" "Blue" "Green" and "Yellow" that fits the following criteria.

$$P(\text{Red}) = \frac{1}{10}$$

$$P(\text{Blue}) = 0.5$$

$$P(\text{Green}) = P(\text{Yellow})$$

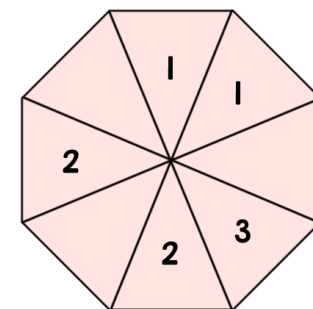
A spinner with 10 sections, 1 red, 5 blue, 2 green and 2 yellow.

8 Whitney is designing a spinner that must have the following probabilities.

$$P(2) = P(3)$$

$$\text{and } P(1) < P(2)$$

2, 3 and 3



Fill in the missing numbers.