GCSE FOUNDATION · REVISION MAT 2

Probabilities that add to 1

1 The probability that a train is late is 0.12.

Work out the probability that it does **not** happen.

2 The table shows the probabilities for a biased spinner.

Outcome	1	2	3	4	5
Probability	0.1	0.25	0.3		0.05

Work out the missing probability.

3 Ben says the probabilities of the three outcomes of an experiment are 0.25, 0.35, 0.3.

Explain why Ben must be wrong.

4 A spinner can land on A, B or C.
P(A) = $2x$, P(B) = x, P(C) = 0.4

Show that $x = 0.2$

5 A spinner can land on A, B or C.
P(A) = $2x$, P(B) = x, P(C) = 0.4

The spinner is spun 80 times.

How many times would you expect it to land on B?

6 A bag has 60 counters.
They are red, blue or green.
P(red) = 0.2.
There are 3 times as many blue counters as green counters.

How many counters of each colour are there?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 2

Probabilities that add to 1

1 $1 - 0.12 = \mathbf{0.88}$

2 $1 - (0.1 + 0.25 + 0.3 + 0.05) = \mathbf{0.3}$

3 The probabilities of all the outcomes must add up to 1.

$0.25 + 0.35 + 0.3 = 0.9$, which is less than 1.

4 $3x + 0.4 = 1$

$3x = 0.6$

$x = \mathbf{0.2}$ ✓

5 $x = 0.2$, so P(B) = 0.2

$0.2 \times 80 = \mathbf{16}$

6 Red: $0.2 \times 60 = 12$

Blue and green: 48, split 3 : 1

Blue **36**, green **12**, red **12**