GCSE FOUNDATION · REVISION MAT 5

Probabilities that add to 1

1 The probability that a bus is full is 0.07.

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

2 The table shows the probabilities for a biased spinner.

Outcome	Red	White	Blue	Black
Probability	0.3	0.1	0.25	

Work out the missing probability.

3 Eve says the probabilities of the three outcomes of an experiment are 0.5, 0.25, 0.2.

Explain why Eve must be wrong.

4 A spinner can land on 1, 2 or 3.
$P(1) = 2x$, $P(2) = 3x$, $P(3) = 0.15$

Show that $x = 0.17$

5 A spinner can land on 1, 2 or 3.
$P(1) = 2x$, $P(2) = 3x$, $P(3) = 0.15$

The spinner is spun 200 times.

How many times would you expect it to land on 2?

6 A bag has 48 counters.
They are red, blue or green.
P(red) = 0.125.
There are 6 times as many blue counters as green counters.

How many counters of each colour are there?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Probabilities that add to 1

1 $1 - 0.07 = \mathbf{0.93}$

2 $1 - (0.3 + 0.1 + 0.25) = \mathbf{0.35}$

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

$0.5 + 0.25 + 0.2 = 0.95$, which is less than 1.

4 $5x + 0.15 = 1$

$5x = 0.85$

$x = \mathbf{0.17}$ ✓

5 $x = 0.17$, so P(2) = 0.51

$0.51 \times 200 = \mathbf{102}$

6 Red: $0.125 \times 48 = 6$

Blue and green: 42, split 6 : 1

Blue **36**, green **6**, red **6**