GCSE FOUNDATION · REVISION MAT 1

Probabilities that add to 1

1 The probability that it rains tomorrow is 0.35.

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

2 The table shows the probabilities for a biased spinner.

Outcome	Red	Blue	Green	Yellow
Probability	0.2	0.35		0.15

Work out the missing probability.

3 Ann says the probabilities of the three outcomes of an experiment are 0.3, 0.4, 0.5.

Explain why Ann must be wrong.

4 A spinner can land on Red, Blue or Green.
P(Red) = x, P(Blue) = $3x$, P(Green) = 0.2

Show that $x = 0.2$

5 A spinner can land on Red, Blue or Green.
P(Red) = x, P(Blue) = $3x$, P(Green) = 0.2

The spinner is spun 50 times.

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

6 A bag has 40 counters.
They are red, blue or green.
P(red) = 0.25.
There are 2 times as many blue counters as green counters.

How many counters of each colour are there?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 1

Probabilities that add to 1

1 $1 - 0.35 = \mathbf{0.65}$

2 $1 - (0.2 + 0.35 + 0.15) = \mathbf{0.3}$

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

$0.3 + 0.4 + 0.5 = 1.2$, which is more than 1.

4 $4x + 0.2 = 1$

$4x = 0.8$

$x = \mathbf{0.2}$ ✓

5 $x = 0.2$, so P(Blue) = 0.6

$0.6 \times 50 = \mathbf{30}$

6 Red: $0.25 \times 40 = 10$

Blue and green: 30, split 2 : 1

Blue **20**, green **10**, red **10**