1 A biased spinner can land on A, B or C.

The table shows the probabilities, in terms of k, of A, B and C.

	A	B	C
Probability	$0.5k$	$7k - 0.15$	$2.5k$

Work out the probability of B.

[3 marks]

$0.5k + 7k - 0.15 + 2.5k = 1$ (1)

$10k - 0.15 = 1$

$10k = 1.15$

$k = 0.115$ (1)

$B = 7(0.115) - 0.15$

$= 0.805 - 0.15$

$= 0.655$ (1)

Answer 0.655

2 In a class there are

n boys

a total of 25 students.

Two of the students are chosen at random.

The probability that both students are boys is $\frac{7}{20}$

Work out the value of n.

[4 marks]

$\frac{n}{25} \times \frac{n-1}{24} = \frac{7}{20}$ (1)

$\frac{n^2-n}{600} = \frac{7}{20}$

$n^2-n = 210$

$n^2-n-210 = 0$ (1)

$(n-15)(n+14) = 0$

(1)

$n = 15$ or $n = -14$

n should be positive, hence $n = 15$

(1)

$n =$ 15