GCSE HIGHER · REVISION MAT 4

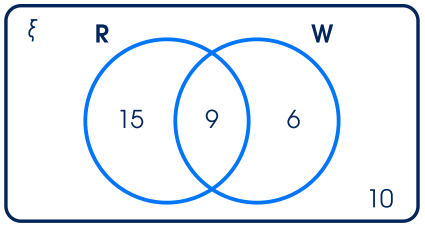
Conditional probability

1 A Year 7 student is chosen.

Find P(bus).

	Walk	Bus	Car	Total
Year 7	22	18	10	50
Year 8	16	24	10	50
Total	38	42	20	100

2 Find P(W | R).



3 Explain why P(A | B) and P(B | A) can be different.

4 A fair dice is rolled.

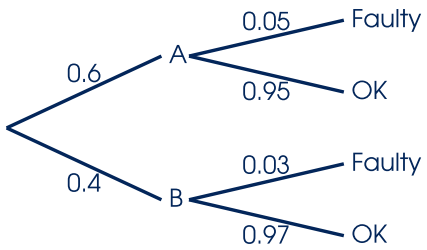
Given the score is greater than 2, find P(it is even).

5 P(A ∩ B) = 0.15 and P(B) = 0.3.

Show that P(A | B) = 0.5.

6 Machine A makes 60% of items; 5% of them are faulty.

Machine B makes the rest; 3% are faulty.



A faulty item is found.

Find P(it was made by A).

7 P(A) = 0.3, P(B) = 0.5 and P(A ∩ B) = 0.2.

Show that A and B are not independent.

8 Two different cards are taken from cards numbered 1 to 6.

Given that their sum is 7, find P(one of them is 1).

ANSWERS · REVISION MAT 4

Conditional probability

1 $\frac{18}{50} = \frac{9}{25}$

2 n(R) = 24

$\frac{9}{24} = \frac{3}{8}$

3 They have different denominators: n(B) and n(A).

4 3, 4, 5, 6

$\frac{2}{4} = \frac{1}{2}$

5 $\frac{0.15}{0.3} = 0.5$

6 P(faulty) = 0.03 + 0.012 = 0.042

$\frac{0.03}{0.042} = 0.714$

7 0.3 × 0.5 = 0.15

$0.15 \neq 0.2$

8 Pairs: {1, 6}, {2, 5}, {3, 4}

$\frac{1}{3}$

Mr&Mrs MATHS