

**M1.(a)**

9  
 9 10  
 9 10 11  
 9 10 11 12

**B1**

(b) 7

*ft a completed table*

**B1ft**

(c) Denominator of 36

or

Numerator of 5 (or their 5)

*36 choices identified*

**M1**

$\frac{5}{36}$  or 0.138(...) or 0.139

or 13.8(...) % or 13.9%

*correct or ft their 8s from a **complete** table*

**A1ft**

**[4]**

**M2.(a)** 0.6 or 60% or  $\frac{6}{10}$

oe

**B1**

(b)  $200 \times 0.4$

oe

M1

80

SC1 120 or  $\frac{80}{200}$

A1

(c) 0.75 or 75% or  $\frac{150}{200}$   
oe

B1

[4]

M3.(a)  $\frac{11}{50}$  or 0.22

oe

*B1 for numerator 11*

*or denominator 50*

*or 11 out of 50*

*or 11 in 50*

*Ignore fw*

B2

(b)  $1 \times 9 (+) 2 \times 12 (+) 3 \times 18 (+) 4 \times 7 (+) 5 \times 4$

or  $9 (+) 24 (+) 54 (+) 28 (+) 20$

oe

*Allow one error*

*May be in table*

M1

135

A1

[4]

**M4.****Alternative method 1**

30 – 13 or 17  
 or  
 30 – 8 or 22  
 or 11

**M1**

30 – 13 and  $(30 - 8) \div 2$   
 or their 17 and their  $22 \div 2$   
 or 17 and 11

**M1dep**

6

**A1****Alternative method 2**

Subtracts a total of 8 passengers from 13 and 17

*eg subtracting 5 male and 3 female gives 8 and 14***M1**

Completes another trial

*eg subtracting 3 male and 5 female gives 10 and 12***M1**

6

**A1****[3]****M5.**(a)  $\frac{3}{8}$ 

oe

**B1**

(b) 0.2 + 0.4 or 0.6 oe (for bag B)  
 or  
 0.625 or 62.5% (for bag A)

**M1**

0.62(5) or 0.63 and 0.6 and bag A

oe

both probabilities correct in the same format and bag A

eg  $\frac{25}{40}$  and  $\frac{24}{40}$  and bag A

A1

[3]

**M6.** Red = 0.3, Blue = 0.6, Yellow 0.1

oe fractions, decimals or percentages

B2 for  $P(B) = 2 \times P(R)$  **and** total = 1B2 for 3, 6, 1 seen **and** two correct probabilitiesB1 for  $P(B) = 2 \times P(R)$  with both < 1B1 for  $P(R) > P(Y)$  **and** total = 1

SC1 3, 6, 1 (may be in working)

SC2 0.6, 0.3, 0.1 oe

B3

**Additional Guidance**Do not allow ratios for 2 or 3 marks but condone 3 : 10, 6 : 10 and 1 : 10 for SC1  
Ignore probability words.

Ignore incorrect change of form or cancelling of fraction if correct probability seen.

Condone 3 and 0.3, 6 and 0.6, 1 and 0.1 seen in boxes for B3

If 3, 6, 1 in boxes but correct probabilities in working then allow B2

[3]

**M7.(a)**  $\frac{2}{5}$ B1 for  $\frac{8}{20}$  or  $\frac{4}{10}$  or 2 out of 5 or 40% or 0.4  
SC1 for  $\frac{3}{5}$ 

B2

(b) 1 - 0.14

oe

M1

0.86

oe

A1

[4]

**M8.1** 1 2 2 2 2 2 3

*Any order*

*B1 for two conditions met*

*ie*

*Used 8 cards and at least five 2s*

*eg 1 2 2 2 2 2 3 3*

*Used 8 cards and twice as many 1s as 3s*

*eg 1 1 1 1 2 2 3 3*

B2

[2]

**M9.**

(a)  $1 - 0.2 - 0.15 - 0.3$   
 $1 - 0.65$

M1

0.35

oe

A1

(b) 0.5

oe

B1

(c)  $200 \times 0.15$  or  $\frac{30}{200}$   
 oe

M1

30

SC1 170

A1

**Alternative**

$$200 - (200 \times 0.2 + 200 \times 0.3 + 200 \times \text{their } 0.35)$$

M1

30

SC1 170

A1

[5]

**M10.**

(a) Cannot say and reason

eg, don't know how many boys and girls there are

B1

(b)  $\frac{7}{30}$

B1

[2]

**M11.**

(a)

	1	3	5	7
0	1	3	5	7
2	3	5	7	9
4	5	7	9	11
6	7	9	11	13

B1 for 1, 2 or 3 errors

B2

(b) 0

ft from a completed table

B1ft

(c)  $\frac{12}{16}$

oe

ft from a completed table

B1ft for their numerator or denominator correct

or  $\frac{2}{8}$  or  $\frac{1}{4}$

B2ft

[5]

M12.  $\frac{3}{4} - \frac{1}{4} \left( = \frac{1}{2} \right)$

M1

$6 \div 2 \times 3$

3 and 9 chosen

M1

9

SC2 blue = 3 or red + blue = 12

A1

**Alternative method 1**

Pair of integers with a difference of 6 eg 2 and 8

1 : 3 or 3 : 1

or

Pair of integers with  $P(\text{blue}) = \frac{1}{4}$

eg 1 and 3, 2 and 6,  $\frac{2}{8}, \frac{3}{12}$

M1

3 and 9 chosen

3 : 9 or 9 : 3 chosen

M1

9

SC2  $blue = 3$  or  $red + blue = 12$

A1

**Algebraic methods are not expected on Unit 1 but, if seen, apply the following schemes**

**Alternative method 2**

$$b + 6 = 3b$$

$$r - 6 = \frac{r}{3}$$

M1

$$2b = 6 \text{ or } b = 3$$

$$3r - 18 = r \text{ or } 2r = 18$$

M1

9

SC2  $blue = 3$  or  $red + blue = 12$

A1

**Alternative method 3**

$$x \text{ red, } (x - 6) \text{ blue, } \frac{x - 6}{x + x - 6} = \frac{1}{4} \text{ oe}$$

M1

$$4x - 24 = 2x - 6$$

*Expanding and eliminating fractions*

M1

9

SC2  $blue = 3$  or  $red + blue = 12$



A1  
[3]

**M13.(a)** Janet **and** reason eg

She has (4) more tickets

She has 5 times the chance

*oe correct comparative statement*

B1

(b)  $5 \div 300$  seen or  $\frac{5}{300}$  seen

*oe May be implied by 5 out of 300, 5 in 300, 1 out of 60, 1 in 60 etc*

*Ratio is M0*

M1

$$\frac{1}{60}$$

*Must be a fraction*

A1

(c)  $120 \div 6$  or  $6 \times 20 = 120$

*oe Builds up to 100 : 20*

M1

20

*SC1 100*

A1

[5]

**M14.(a)** 0.05

B1

(b)  $150 \times 0.92$

M1

138

SC1 for 12

A1

[3]

**M15.**

(a)  $\frac{1}{200}$

oe

B1

(b)  $71 - 51$  or  $70 - 50$  or  $20$

M1

$\frac{20}{200}$

oe  $\frac{1}{10}$  SC1  $\frac{19}{200}$

A1

[3]

**M16.**

(a) 0.6

oe

B1

(b) 5

B1

(c) 0.4

oe

B1

[3]

**M17.**

(a)  $1 - (0.3 + 0.25 + 0.1)$

**M1**

0.35

oe

**A1**

(b) 0.4

oe

**B1****[3]**