



GCSE MARKING SCHEME

SUMMER 2018

GCSE
MATHEMATICS – COMPONENT 1 (FOUNDATION TIER)
C300U10-1

INTRODUCTION

This marking scheme was used by WJEC for the 2018 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

	GCSE (9-1) Mathematics mponent 1: Foundation Tier	Mark	Comment
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		B1	
Too or equivalent B1			
	quivalent	B1	
(c) (32 ÷ 10) ÷ 2 or equivalent M1 May be in steps 1.6 A1 Allow e.g. 1.60 (d) 3 3/7, 3/5 B1 (e) 109.8 B1 Allow trailing zeros (7) 2.(a)(i) cuboid B1 Do not accept rectangular prism or square based prism			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		B1	0.01% is B0
1.6 A1 Allow e.g. 1.60 (d) 3 3 3 7 5 B1 (e) 109.8 B1 Allow trailing zeros (7) 2.(a)(i) Cuboid County or square based prism			
	÷ 2 or equivalent	M1	May be in steps
3 3 3		A1	Allow e.g. 1.60
To '7' 5			
(e) 109.8 B1 Allow trailing zeros (7) 2.(a)(i) cuboid B1 Do not accept rectangular prism or square based prism		R1	
109.8 B1 Allow trailing zeros (7) 2.(a)(i) cuboid B1 Do not accept rectangular prism or square based prism			
2.(a)(i) cuboid B1 Do not accept rectangular prism or square based prism		R1	Allow trailing zeros
2.(a)(i) cuboid B1 Do not accept rectangular prism or square based prism			7 mow training 20100
based prism		(-,	
(a)(ii)		B1	
8 B1		B1	
(b) B1	cated	R1	
(3)			
3.(a)			
(\pounds) 6.50+4.29+(2.10÷2) or M2 M1 for 2.10÷2 or equivalent or for sight of		M2	
(£) 6.50 + 4.29 + 2.10 – 1.05 or equivalent 1.05 or equivalent for sight of 12.89	+ 4.29 + 2.10 – 1.05 or equivalent		1.05 or equivalent or for 6.50 + 4.29 + 2.10 or for sight of 12.89
(£)11.84 or 1184(p) CAO A1 Allow £11.84p	or 1184(p) CAO	A1	
Do not allow 11.84p or £1184	·		Do not allow 11.84p or £1184
(b) (£) 20 – (11.84 + 2.75) or equivalent M1 FT 'their 11.84', provided it is less than 17.25	11.84 + 2.75) or equivalent	M1	FT 'their 11.84', provided it is less than 17.25
		1	·
(£) 5.41 or 541(p) A1 FT	or 541(p)	A1	
Allow £5.41p Do not allow 5.41p or £541			
(5)		(5)	20110.411011 01.1111 01.2011

August A	1 (2)		
(b) Attempts to find 11:25 – 10:32 M1 May be in steps; allow for sight of 28 and 25 (minutes) (c)(i) S A T		B1	Any clear notation: may be identified in table
Attempts to find 11:25 − 10:32 M1 May be in steps; allow for sight of 28 and 25 (minutes) If M0 then SC1 for an answer of 44 mins (from summing the 2 train journeys) (c)(i) S A T S A C S B T S B C P A A T P A C P B T P B C B2 Allow either of the first two rows to be repeated for B2 (c)(ii) B1 for any 4 or 5 correct rows, ignoring any repeated rows NB order of letters may be different (c)(iii) B1 C C P B T P B C CAO; do not allow 2 : 8, but accept 25% (c)(iii) CAO; do not allow 2 : 8, but accept 25% (iii) Seen or implied 5.(a) 9 × 5 + 25 (b) M1 (225 − 25) ÷ 5 M1 40 A1 A1 Allow 2 marks for an embedded answer e.g. 225 = 40 × 5 + 25; (d) (4) 6.(a) (25/100 × 50 = £) 12.5(0) B1 FT 'their 25/100 × 50'; implies the first B1 Sight of (£) 59.99 and correct choice B1 Correct choice FT 'their (£) 62.50' Correct choice e.g. 'Shirts Glorious Shirts' may be implied; implied by e.g. repeated subtraction or 12 × 23 = 276 (b) 276 ÷ 12 M1 (c) 23(.00) A1			Any dear notation, may be identified in table
A1 allow for sight of 28 and 25 (minutes)		N44	May be in stone.
A1	Attempts to find 11:25 – 10:32	IVIT	
(c)(i) S A T S A C S B T S B C P A T P B C	53 (minutes)	A1	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			
$ \begin{array}{ c c c c }\hline S & A & C \\ \hline S & B & T \\ \hline S & B & C \\ \hline P & A & T \\ \hline P & A & C \\ \hline P & B & T \\ \hline P & B & C \\ \hline \end{array} $ B1 for any 4 or 5 correct rows, ignoring any repeated rows NB order of letters may be different $ \begin{array}{ c c c c }\hline \\ \hline \\$		D.0	All of the first
$ \begin{array}{ c c c c }\hline S & B & T \\ \hline S & B & C \\ \hline P & A & T \\ \hline P & A & C \\ \hline P & B & T \\ \hline P & B & C \\ \hline \end{array} $		B2	· ·
$ \begin{array}{ c c c c }\hline S & B & C \\\hline P & A & T \\\hline P & A & C \\\hline P & B & T \\\hline P & B & C \\\hline \end{array} $ NB order of letters may be different NB order orde			IOI BZ
$ \begin{array}{ c c c c }\hline P & A & C \\\hline P & B & T \\\hline P & B & C \\\hline \end{array} $			B1 for any 4 or 5 correct rows, ignoring any
NB order of letters may be different NB order of letters may be different P B T P B C	PAT		repeated rows
$ \begin{array}{ c c c c }\hline P & B & C \\\hline\hline P & B & C \\\hline\hline \end{array} $			NP order of letters may be different
(c)(iii) $\frac{2}{8} \text{ or equivalent; ISW}$ B1 CAO; do not allow 2: 8, but accept 25% (6) $\frac{5.(a)}{9 \times 5 + 25}$ M1 Seen or implied (£) 70 (b) $(225 - 25) \div 5$ M1 Seen or implied 40 A1 Allow 2 marks for an embedded answer e.g. $225 = 40 \times 5 + 25;$ (4) 6.(a) $(\frac{25}{100} \times 50 = £) \ 12.5(0)$ B1 FT 'their $\frac{25}{100} \times 50$ '; implies the first B1 Sight of (£) 59.99 and correct choice B1 Correct choice FT 'their (£) 62.50' Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (£) 60 (.00) and correct choice (b) $276 \div 12$ M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$	l		IND Order of letters may be different
$\frac{2}{8} \text{ or equivalent; ISW} \qquad \qquad \text{B1} \qquad \text{CAO; do not allow 2 : 8, but accept 25\%}$ $\frac{5.(a)}{9 \times 5 + 25} \qquad \qquad \text{M1} \qquad \text{Seen or implied}$ $\frac{(£)}{(£)} 70 \qquad \qquad \text{A1} \qquad \qquad \text{M1} \qquad \text{Seen or implied}$ $40 \qquad \qquad \text{A1} \qquad \text{Allow 2 marks for an embedded answer e.g.}$ $\frac{25}{100} \times 50 = £) \ 12.5(0) \qquad \qquad \text{B1} \qquad \qquad \text{FT 'their } \frac{25}{100} \times 50 \text{ '; implies the first B1}$ $\text{Sight of } (£) \ 59.99 \ \text{and correct choice} \qquad \qquad \text{B1} \qquad \text{Correct choice FT 'their } (£) \ 62.50 \text{ '}$ $\text{Correct choice e.g. 'Shirts Glorious Shirts' may be implied;}$ $\text{Allow sight of } (£) \ 60 \ (.00) \ \text{and correct choice}$ $\frac{(b)}{276 \div 12} \qquad \qquad \text{M1} \qquad \text{seen or implied; implied by e.g. repeated subtraction or } 12 \times 23 = 276$	P B C		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2 — or equivalent: ISW	B1	CAO; do not allow 2 : 8, but accept 25%
5.(a) $9 \times 5 + 25$ M1Seen or implied(£) 70A1(b) $(225 - 25) \div 5$ M1Seen or implied40A1Allow 2 marks for an embedded answer e.g. $225 = 40 \times 5 + 25$;(4)B16.(a) 	8		
5.(a) $9 \times 5 + 25$ M1Seen or implied(£) 70A1(b) $(225 - 25) \div 5$ M1Seen or implied40A1Allow 2 marks for an embedded answer e.g. $225 = 40 \times 5 + 25$;(4)B16.(a) $(\frac{25}{100} \times 50 = £)$ 12.5(0)B1FT 'their $\frac{25}{100} \times 50$ '; implies the first B1Sight of (£) 59.99 and correct choiceB1Correct choice FT 'their (£) 62.50'Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (£) 60 (.00) and correct choice(b) $276 \div 12$ M1seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$		(6)	
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(b) $(225-25) \div 5$ M1 Seen or implied A1 Allow 2 marks for an embedded answer e.g. $225 = 40 \times 5 + 25$; (4) 6.(a) $(\frac{25}{100} \times 50 = \pounds) \ 12.5(0)$ B1 FT 'their $\frac{25}{100} \times 50$ '; implies the first B1 Sight of (£) 59.99 and correct choice B1 Correct choice FT 'their (£) 62.50' Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (£) 60 (.00) and correct choice (b) 276 \div 12 M1 seen or implied M2 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$			
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40 A1 Allow 2 marks for an embedded answer e.g. $225 = 40 \times 5 + 25$; (4) 6.(a) ($\frac{25}{100} \times 50 = \pounds$) 12.5(0) B1 FT 'their $\frac{25}{100} \times 50$ '; implies the first B1 Sight of (£) 59.99 and correct choice B1 Correct choice FT 'their (£) 62.50' Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (£) 60 (.00) and correct choice (b) 276 ÷ 12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00)	1 ' '	M1	Seen or implied
$ 225 = 40 \times 5 + 25; $ $ (4) $ $ 6.(a) $ $ (\frac{25}{100} \times 50 = \pounds) \ 12.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) \ 62.5(0) $ $ (Shot on Goal = \pounds) $	(223 – 23) ÷ 3	1011	
(4) $6.(a)$ $(\frac{25}{100} \times 50 = £) \ 12.5(0)$ $(Shot on Goal = £) \ 62.5(0)$ $B1$ $FT 'their \frac{25}{100} \times 50'; implies the first B1$ $Sight of (£) \ 59.99 \ and correct choice$ $B1$ $Correct choice FT 'their (£) \ 62.50'$ $Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (£) \ 60 \ (.00) \ and correct choice} (b) 276 \div 12 M1 seen or implied; implied by e.g. repeated subtraction or 12 \times 23 = 276 (£) \ 23(.00)$	40	A1	Allow 2 marks for an embedded answer e.g.
6.(a) $ (\frac{25}{100} \times 50 = \pounds) \ 12.5(0) $ B1 $ (Shot on Goal = \pounds) \ 62.5(0) $ B1 $ (Sight of (\pounds) 59.99 \ and \ correct \ choice $ B1 $ (Sight of (\pounds) 59.99 \ and \ correct \ choice $ B1 $ (Sight of (\pounds) 59.99 \ and \ correct \ choice $ B1 $ (Sight of (\pounds) 59.99 \ and \ correct \ choice \ e.g. \ 'Shirts \ Glorious \ Shirts' \ may \ be \ implied; $ Allow sight of (£) 60 (.00) and \ correct \ choice \ (b) \ 276 \div 12 $ (£) 23(.00) $ M1 $ (£) 23(.00) \ A1$			$225 = 40 \times 5 + 25;$
6.(a) $ (\frac{25}{100} \times 50 = \pounds) \ 12.5(0) $ B1 (Shot on Goal = £) 62.5(0) B1 FT 'their $\frac{25}{100} \times 50$ '; implies the first B1 Sight of (£) 59.99 and correct choice B1 Correct choice FT 'their (£) 62.50' Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (£) 60 (.00) and correct choice (b) 276 ÷ 12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00)		(4)	
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Sight of (\pounds) 59.99 and correct choice B1 Correct choice FT 'their (\pounds) 62.50' Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (\pounds) 60 (.00) and correct choice (b) 276÷12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00) A1		D 4	25
Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (\pounds) 60 (.00) and correct choice (b) 276÷12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00) A1	(Snot on Goal = £) 62.5(0)	B1	100° Their $\frac{100}{100}$ ×50°; implies the first B1
Correct choice e.g. 'Shirts Glorious Shirts' may be implied; Allow sight of (\pounds) 60 (.00) and correct choice (b) 276÷12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00) A1			
be implied; Allow sight of (\mathfrak{L}) 60 (.00) and correct choice (b) 276÷12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00) A1	Sight of (£) 59.99 and correct choice	B1	Correct choice FT 'their (£) 62.50'
be implied; Allow sight of (\mathfrak{L}) 60 (.00) and correct choice (b) 276÷12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00) A1			Correct choice e.g. 'Shirts Glorious Shirts' may
Allow sight of (\pounds) 60 (.00) and correct choice (b) 276÷12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00) A1			
(b) $276 \div 12 \qquad \qquad \text{M1} \qquad \text{seen or implied; implied by e.g. repeated} \\ \text{subtraction or } 12 \times 23 = 276 \\ \text{(£) } 23(.00) \qquad \qquad \text{A1} \qquad \qquad \text{A1}$,,
276÷12 M1 seen or implied; implied by e.g. repeated subtraction or $12 \times 23 = 276$ (£) 23(.00) A1			Allow sight of (£) 60 (.00) and correct choice
subtraction or $12 \times 23 = 276$ (£) 23(.00)		N/14	soon or implied implied by a g repeated
(£) 23(.00) A1	∠/o÷1∠	IVIT	
	(£) 23(,00)	A1	00000000000000000000000000000000000000
		(5)	

7.(a) 200 (cm) or 2 m(etres)	B1	ISW
(b) No stated or implied with valid reason e.g. '3: 75 is 1: 25 (not 1: 50).' or '3cm is 150 cm (not 75 cm).' or 'It should have been 1.5 cm'	E1	Allow e.g. 'No, he needs to divide 75 by 50 to get the size of the model's door.' or 'No it is twice as wide as it should be.' or '3 \times 25 = 75' or '3 \times 50 = 150'
(c) 250 ÷ 50 or 2.5 ÷ 50	M1	For division by 50 Allow e.g. 2 m 50 cm \div 50 or for 50 \times 5 = 250
5 (cm)	A1	CAO
	(4)	
8. 0.8 or equivalent	B1 (1)	
9.(a)	(.)	
Any percentage between $33\frac{1}{3}$ (%) and 40(%) exclusive.	B1	
(b) Correct first step e.g. $48 \div 3 = 16 \text{ or } 2 \times 48 = 96 \text{ or } 48 \div 4 = 12 \text{ or } \frac{1}{2} \times \frac{1}{3} \times 48$	B1	
Correct second step e.g. $16 \times 2 = 32$ or $96 \div 3 = 32$ or $12 \times 2 = 24$ or $12 \div 3 = 4$	B1	FT their first step Implies the first B1.
8	B1	FT
<u></u>	(4)	

	1	
10. 2 × 2000 or 1990 + 1800 or 2000 + 1800 or 2000 + 1900 or equivalent	B1	Allow any reasonable calculation with at least one correctly rounded value and no incorrect rounding in each case. NB1 the question requires a calculation so sight of 2000 and 1800 followed by a total of 3800 without the + seen is B0 NB2 It is acceptable to round up in both cases because of the context of the question. Ignore consistent place value errors from converting to kg for M1 A1 'their estimate for the total mass' + 3000 or
2 × 2000 + 3000 (= 7000) or 1990 + 1800 + 3000 (= 6790) or 2000 + 1800 + 3000 (=6800) 2000 + 1900 + 3000 (= 6900) or 1986 + 1834 + 3000 (= 6820) or equivalent or 7000 - 2 × 2000 (= 3000) or 7000 - 1990 - 1800 (= 3210) or 7000 - 2000 - 1800 (= 3200) 7000 - 2000 - 1900 (= 3100)		'the actual total mass + 3000'; or 7000 – 'their estimate for the total mass' or 7000 – 'the actual total mass' Accept all masses in kilograms Allow 7000 – 3000 (= 4000) with sight of the total mass of the rabbits
7000 – 1986 – 1834 (= 3180) Evaluates correctly	A1	FT their sum or difference of masses; implies M1
Yes stated or implied following a correctly-evaluated, valid calculation and with evidence of an appropriate correct conversion from grams to kilograms or kilograms to grams seen or implied at some stage e.g. $1986 \text{ (g)} \approx 2 \text{ (kg)}$ or $1834 \text{ (g)} \approx 1.8 \text{ (kg)}$ $7000 \text{ (g)} = 7 \text{ (kg)}$ or $6790 \text{ (g)} = 6.79 \text{ (0)}$ (kg) or $6900 \text{ (g)} = 6.9 \text{ (00)}$ (kg)	A1	Dep on previous M1 A1 Conversion may be implied by e.g. 6800 g is less than 7 kg or by 4000 + 3000 = 7000 g so yes but NOT by e.g. 6800 is less than 7 or 4000 + 3000 = 7000 Allow further rounding when grams converted to kg e.g. 6900 (grams) = 7 kg NB Sight of 1000 g = 1 kg only, is not sufficient to earn the mark. The conversion must be for a mass relating to the context of the question.
	(4)	

11.		Check teacher's comment for values.
Sight of 8 (coins in the purse)	B1	
Sight of (value of coins is) (£)10	B1	
Sight of (greatest and least values are) £2 and 50p Correct solution:	B1	Not just for these in a list of coins, they must be identified in some way as the 2 coins that are 'one 4 times the other' e.g. they may be the only coins stated or they may be circled in a list etc
£2 £2 £2 £1 £1 £1 50p 50p OR £2 £2 £2 £2 50p 50p 50p 50p	B1	CAO
	(4)	
12.(a)(i) 55	B1	
(a)(ii) -1	B1	
(a)(iii) 3	B1	Allow embedded answer
(b) Square root or equivalent	B1	
	(4)	

13. (a) Indication of bearing 135° ± 2° from <i>L</i> Indication of bearing 064° ± 2° from <i>P</i> Position of the boat marked	B1 B1 B1	Position may be implied by intersection of straight lines for bearings
13. (b)(i) 6 × 10 ÷ 5	M2	Or equivalent full method STRICT FT 'their position of the boat', so 'their 6' × 10 ÷ 5 Tolerance ± 2 mm M1 for 'their 6' in cm × 10 or 'their 6' in mm × 10 ÷ 5
12 (litres)	A1	FT; must follow correct use of 'their 6' in cm If there is no 'position of the boat' marked in (a) allow SC2 for 'a number of litres' correctly found from 'a length in cm' × 10 ÷ 5 or SC1 for 'a length in cm' × 10 ÷ 5
(b)(ii) Valid assumption about the conditions or straight line of the journey e.g. 'The conditions were normal so the boat travelled 5km per litre.' or 'The weather was normal.' or 'The sea was normal.' or 'The weather conditions were unusually good.' or 'The boat travelled in a straight line to H.'	E1	
Valid impact based on their assumption e.g. 'The boat would use more fuel.' or 'The boat would use less fuel.' or 'The amount of fuel used to travel 5 km would be different, so the total amount needed would be different.'	E1	

14.(a)		
x + 2x + 5x (= 8x)	M1	Allow for sight of 1 + 2 + 5 (= 8) or 1 : 2 : 5 or equivalent
		or for 3 numbers of bulbs in the ratio 1 : 2 : 5 or for sight of x , $2x$, $5x$
320 ÷ 8 seen or implied	M1	FT 'their 1 + 2 + 5'; may be implied by trials leading to e.g. 40 : 80 : 200
(x =) 40 seen or implied	A1	CAO May be implied in later working.
$40 \times 6 + 2 \times 40 \times 5 + 5 \times 40 \times 10$ $(40 \times 6 + 80 \times 5 + 200 \times 10 =$	M1	FT 'their derived <i>x</i> ' May be seen in stages.
240 + 400 + 2000)		may be seen in stages.
(£) 2640	A1	FT 'their derived $x' \times 66$
(b)(i)		
$25 + \frac{25}{5} \times 3 = 25 + 15$ or $\frac{25}{5} \times 8 = 5 \times 8$	M1	
40 (hours)	A1	If no marks awarded, allow SC1 for sight of 15 (hours)
(b)(ii)		
156 ÷ 15	M1	FT 'their (40 – 25)', provided 'their 15' ≥ 11
(£) 10.4(0)	A1	FT ; any FT values must be rounded or truncated to 2 dp
(b)(iii)		
$\frac{175}{25}$ -1 or $\frac{175-25}{25}$	N/4	May be in stone
25 25	M1	May be in steps
(£) 6	A1	
	(11)	

15. (a)		
$\frac{46}{2}$ ×7 or equivalent	M1	May be in steps.
161 (pupils)	A1	
(b) A correct sum or difference e.g. $\frac{5}{8} + \frac{3}{40} \text{ or } \frac{7}{10} - \frac{3}{40} \text{ or } \frac{7}{10} - \frac{5}{8}$ or equivalent	B1	May be earned later.
Sight of two fractions with a common denominator equivalent to any two of $\frac{5}{8}$, $\frac{7}{10}$, $\frac{3}{40}$	B1	e.g $\frac{25}{40}$, $\frac{28}{40}$ or $\frac{50}{80}$, $\frac{56}{80}$; May be in a sum or difference e.g. $\frac{25}{40}$ + $\frac{3}{40}$ or $\frac{28}{40}$ - $\frac{3}{40}$ or $\frac{28}{40}$ - $\frac{25}{40}$ Allow any correct common denominator;
Yes with a correctly evaluated sum or difference appropriately simplified or	E1	may imply previous B1 From a sum or difference, e.g. $ \left(\frac{25}{40} + \frac{3}{40} = \right) \frac{28}{40} = \frac{7}{10} \text{ or} $ $ \left(\frac{28}{40} - \frac{3}{40} = \right) \frac{25}{40} = \frac{5}{8} \text{ or} $ $ \left(\frac{56}{80} - \frac{50}{80} = \right) \frac{6}{80} = \frac{3}{40} $
Yes following sight of $\frac{25}{40}$, $\frac{28}{40}$ or a pair of equivalent fractions		if no sum or difference stated then maximum 2 marks (B0 B1 E1)
	(F)	Alternative method: (or equivalent in percentages) $0.7 - 0.625$ $= 0.075$ B1 Yes with $\frac{75}{1000} = \frac{3}{40}$ E1
16.	(5)	
(1700 +) $\frac{1700}{100} \times 3 \times 4$ No and comparison of 204 with 300 or 1904 with 2000.	M2 A1	M1 for $\frac{1700}{100} \times 3 (=51)$ Allow 'No she does not have enough' (after e.g.1904 found) Allow 'Yes' with 1904 'as the £2000 was only an estimate'

17.		Answers may be seen on the diagram; it must be clear from description or reasoning which angles are being calculated or used
Angle <i>AEF</i> or Angle <i>DEB</i> = 93° (Angles on a straight line (sum to 180))	B1	Alternative method for first 2 marks: Angle BEF = 87° (Vertically opposite angles (are equal))
Angle AFE = 54° (Corresponding angles (are equal)) or Angle ABC = 93° (Corresponding angles (are equal) or alternate angles (are equal))	B1	Angle ABC = 93° (Interior angles (sum to 180))
$(x =) 180^{\circ} - 93^{\circ} - 54^{\circ} = 33^{\circ}$ (Angles in a triangle (sum to 180))	B1	or equivalent e.g. 93 + 33 + 54 = 180
A correct reason linked to a correct statement	B1	
		<u>Alternative method 1:</u> Assuming $x = 33^{\circ}$:
		Angle ABC = $180^{\circ} - 33^{\circ} - 54^{\circ} = 93^{\circ}$ (Angles in a triangle (sum to 180)) B1 Angle AEF or Angle DEB = 93°
		(Angles on a straight line (sum to 180)) B1 Angle ABC = Angle AEF (Corresponding angles (are equal)) or Angle ABC = Angle DEB or
		(Alternate angles (are equal)) B1 A correct reason linked to a correct statement B1
		Alternative method 2: Assuming $x = 33^{\circ}$:
		Angle AFE = 54° (Corresponding angles (are equal)) B1 Angle AEF = $180^{\circ} - 33^{\circ} - 54^{\circ} = 93^{\circ}$
		(Angles in a triangle (sum to 180)) B1 93 + 87 = 180
		(Angles on a straight line (sum to 180)) B1 A correct reason linked to a correct statement B1
		Alternative method 3: Angle AFE = 54°
		(Corresponding angles (are equal)) B1 $x + 54 = 87$ (Exterior angle (is equal to the sum of the two
		opposite interior angles)) B1
		x = 87 - 54 = 33 B1 A correct reason linked to a correct statement
	(4)	B1

18.(a)		
8×21 or equivalent	M1	
2	1011	
84 (cm ²)	A1	
(b)	A I	
Valid explanation including 'perpendicular' or equivalent e.g. 'It is the perpendicular distance.' or 'Because the height makes a right angle with the base.'	E1	Allow e.g. 'Because it is at a right angle' or 'It's a perpendicular angle that splits directly through the middle.' or 'It is the height of the triangle'
		Do not allow 'Because it goes straight down not diagonally which would be longer' or 'Because it is a vertical line not a sloping one'
	(3)	
19.(a)		
$\frac{4}{9}$ or an equivalent fraction	B1	
(b)	_	
2:3 or equivalent	B1	
	(2)	
20.	, ,	
m = 3 and $n = 6$	B2	B1 for $m = 3$ or for $n = 2 \times$ 'their m '
24	(2)	
21.	B1	Clearly identified
	(1)	
22.* (soup =) 5 (water =) 4	B2	B1 for sight of 3×4 and 3×5 or equivalent or for (LCM =) 60 or for a correct Venn diagram of primes factors $2 \times 3 \times 5$ or for 4 and 5 (values reversed) or for answers of $5n$ and $4n$ where n is an integer > 1
	(2)	

23.*(a)		
Correct plot	P1	May or may not be joined 40 35 30 25 20 15 10 5 2002 2004 2006 2008 2010 2012 2014
(b)(i) 2004	B1	
(b)(ii) 2006 and 2008	B1	
(b)(iii) Any valid comparison. e.g. 'The composting percentage is always increasing but the recycling percentage increases (until 2008) but then decreases.' or 'From 2012 the recycling and composting rates are about the same.' or 'From 2002 to 2008 both rates are increasing but after 2008 the recycling rate decreases whereas the composting rate keeps on increasing.' or 'The recycling rate is more than the composting rate until 2012 but in 2014 a greater % of waste is composted than recycled.' or 'More waste is recycled than is composted until 2012. (After that there is about the same amount of each).'	E1	A comparison does not need to mention the years but must mention composting and recycling. Allow e.g. 'Waste recycled has eventually begun to fall where compost has continued to gradually rise, (eventually taking over recycled waste)' or 'As the percentage of composting has increased the percentage of recycling has declined from 2008' or 'More waste is being recycled and composted in 2014 than in 2002' or 'Both the waste recycling and composting have increased between 2002 and 2014'
04*(-)	(4)	
24.*(a) Valid comment e.g. 'The groups overlap so people who spent £20 may be in different groups.' or 'His groups are too big.' or 'You cannot tell which group 40 is in.'	E1	Do not allow comments such as 'The ages in the groups are too big'
$\frac{1}{100} \text{ or equivalent}$	B2	B1 for $\frac{1}{10} \times \frac{1}{10}$ or equivalent
	(3)	

25.*(a)		
$12x - 7x = 6 + 9 \text{ or } x = \frac{15}{5} \text{ or equivalent}$	B1	Seen or implied FT until 2nd error
<i>x</i> = 3	B1	Mark final answer; allow embedded answer for 2
(b) 10x+20-(2x-9)=30 or 10(x+2)-2x+9=30 or better	B1	FT until 2nd error Seen or implied For expanding at least one pair of brackets correctly
10x - 2x = 30 - 9 - 20 or better	B1	FT For collecting terms
$x = \frac{1}{8}$ ISW	B1	FT; if FT the common error $8x = 19$, then the answer must be 2.375 or $\frac{19}{8}$, not rounded to e.g. 2.3
(c)(i) $10x \le 15$ or equivalent	M1	
$x \le 1.5$ or equivalent	A1	Mark final answer No marks for use of "=", unless finally replaced to give $x \le 1.5$ then award M1 A1.
(ii) Solid circle at 1.5 with arrow left	B1	STRICT FT 'their (c)(i)' provided an inequality Accept any unambiguous notation provided there is no termination (so not a line with a circle at each end)
(d) No with valid explanation. e.g. 'The correct answers are $x = 3$ and $x = 2$.' or 'She has forgotten to put $x - 3$ and $x - 2$ equal to 0 and solve.' or 'When $x = -3$ the value is 30.' or 'The correct solution is $x = 3$ or $x = 2$.'	E1	Do not accept e.g. 'The values do not work' without supporting evidence. Allow 'No and $(-3 - 3) = -6$ and $(-2 - 2) = -4$ '
L	()	1

00 */-)	I	T
26.*(a)	B2	D4 for 0 and 1 have 1 5
8n-5	DZ	B1 for $8n + k$ where $k \neq -5$
(b)		
5, 19, 57	B2	B1 for any two correct
5, 19, 57	DZ	Briorany two correct
		If no marks then SC1 for 3, 5, 19
	(4)	in the marks their control o, o, 15
27.*(a)	(')	
Valid explanation e.g.	E1	Allow e.g. 'Both increased over 10 days but not
'Correlation does not imply causation.' or		because of each other' or 'The graph does not
'The manager has confused correlation		provide evidence that one has caused the
with causation.' or		other, there could be a common cause for the
'Something else may have made the		two.'
number of hats and hot drinks increase		
together, such as the weather getting		
colder.'		
(b)(i)	D4	Following troud with points above and but
Correct line of best fit drawn	B1	Following trend with points above and below; must be ruled
		must be ruled
(b)(ii)		
Answer in the range 28 to 33	B1	FT 'their line of best fit'
(b)(iii)		The train mile of book it.
Valid comment e.g.	E1	Do not accept 'Not suitable at all' without
'It will give a negative number of drinks.' or		justification.
'It may not be very accurate as there is not		
much data.' or 'Even though the correlation		Accept comments that imply e.g. the
is negative, you cannot be sure of the		relationship is not linear.
pattern.' or 'Other things may influence the		
sale of the drinks besides the weather so it		Allow e.g. 'It is only based on findings from 10
may not be very accurate.' or 'It is outside		days' or 'There are no drinks sold around 17'
the data given.'		Do not allow e.g. 'Not suitable as not enough
		information'
	(4)	Information
28.*	(-7)	
Any valid reason e.g.	E1	Allow e.g. 'Area of circle should be $\pi \times r^2$ ' or
'Nia has found the circumference.' or		'Area circle = $\pi \times 12^2$.'
'Circumference circle = $\pi \times 24$.'		1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
or 'She has used the diameter, not the		Do not allow e.g. 'Area circle = $\pi \times r^2$ and
radius squared'. or 'Area circle = $\pi \times 144$ '		Circumference = $\pi \times d$
•		or Area = $\pi \times r^2$ without further evidence e.g.
		correct method shown
$(\pi \times 144)$		
$\left(\frac{\pi \times 144}{8} = \right) 18\pi \text{ (cm}^2)$	B2	Mark final answer
		$\pi \times 12^2$
		B1 for (area sector =) $\frac{\pi \times 12^2}{8}$ or equivalent;
		Allow use of π = 3.14 for E1 and B1
	(3)	
29.*	` ′	
Bottom left (5 th) graph ticked	B1	

C300U10-1 EDUQAS GCSE MATHEMATICS – COMPONENT 1 (FOUNDATION TIER) SUMMER 2018 MS/ED