



**General Certificate of Secondary Education
Practice Paper
Set 1**

**Mathematics (Linear) B
Paper 2
Higher Tier**

4365

Mark Scheme

Mark Schemes

Principal Examiners have prepared these mark schemes for practice papers. These mark schemes have not, therefore, been through the normal process of standardising that would take place for live papers.

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Glossary for Mark Schemes

GCSE examinations are marked in such a way as to award positive achievement wherever possible. Thus, for GCSE Mathematics papers, marks are awarded under various categories.

- M** Method marks are awarded for a correct method which could lead to a correct answer.
- A** Accuracy marks are awarded when following on from a correct method. It is not necessary to always see the method. This can be implied.
- B** Marks awarded independent of method.
- M dep** A method mark dependent on a previous method mark being awarded.
- B dep** A mark that can only be awarded if a previous independent mark has been awarded.
- ft** Follow through marks. Marks awarded following a mistake in an earlier step.
- SC** Special case. Marks awarded within the scheme for a common misinterpretation which has some mathematical worth.
- oe** Or equivalent. Accept answers that are equivalent.
eg, accept 0.5 as well as $\frac{1}{2}$

Q	Answer	Mark	Comments
1	600×1.15	M1	
	690	A1	
	their 690 – 570 or their 120	M1	
	their 120 \div 1.29	M1	
	93.02 or 93.03 or 93	A1	
2 (a)	$2(4w - 5)$	B1	
2 (b)	$7x + 3x$ or $6 - 2$	M1	
	$10x = 4$	A1	
	$\frac{4}{10}$	A1	
3 (a)	Bearing of 110°	M1	Accept [108° , 112°]
	Straight line joining Karak and Safawi and Ezraq marked	A1	
3 (b)	$\frac{6.4}{1.6}$ or $\frac{70}{1.6}$ or 6.4×70	M1	Accept [1.5, 1.7] Accept [6.3, 6.5]
	$\frac{6.4 \times 70}{1.6}$	M1dep	
	280	A1	Accept [255, 305]

Q	Answer	Mark	Comments
4	Compare two of (6 kg) 12×1.49 4×4.45 2×8.99	M1	
	Compare the third one with the better of the first comparison	M1dep	
	Correct answers of (£)17.88 (£)17.80 (£)17.98	A1	
	Correct conclusion from their working 4 packs of 1.5 kg	Q1	Strand (iii) Dependent on M marks
4 Alt	2×4.45	M1	Compared with 8.99 (3 kg) oe
	3×1.49	M1	Compared with 4.45 (1.5 kg) oe
	Correct answers 8.90 and 8.99 4.47 and 4.45	A1	
	Correct conclusion from their working 4 packs of 1.5 kg	Q1	
5	$18 \times 1 (+) 8 \times 2 (+) 2 \times 3$	M1	
	their $40 \div 50$	M1dep	
	0.8	A1	
6	$\frac{18}{100} \times 825$	M1	oe
	their (£) 148.5 (0) + 825 or 1.18×825	M1dep	
	973.5(0)	A1	
	973.(50) and no	Q1ft	Strand (iii) Organised response and conclusion based on values stated
7 (a)	100.80	Q1	Strand (i)
7 (b)	Trousers, Dress	B2	B1 for 1 correct (and 1 incorrect)
7 (c)	$\frac{120}{117.5}$	M1	
	$\frac{1200}{1175}$ or $\frac{240}{235}$	A1	

Q	Answer	Mark	Comments
8 (a)	10 points plotted correctly	B3	B2 for 8 or 9 points B1 for 6 or 7 points $\frac{1}{2}$ square tolerance
8 (b)	No correlation	B1	
8 (c)	$\frac{6}{10}$	B2	B1 for 6 seen or $\frac{\text{their } 6}{10}$
9 (a)	x^7	B1	
9 (b)	w^5	B1	
9 (c)	$2y + 6 + 6y - 3$	M1	Allow one error
	$8y + 3$	A1	
10 (a)	2 and -1	B2	B1 for each
10 (b)	All 7 points plotted correct	B2	$\pm \frac{1}{2}$ square tolerance B1 for 5 or 6 points correct
	Smooth curve	B1ft	ft their points
10 (c)	No and valid reason	B1	eg when $x = 10, y = 47$
11	$10 \times 10 (\div 4)$	M1	
	$\pi \times 5 \times 5 (\div 4)$	M1	
	$\{10 \times 10 - \pi \times 5 \times 5\} (\div 4) (\times 4)$	M1dep	
	21.46...	A1	
	21	B1ft	
12	Correct translation with vertices at (7, 2), (9, 2) and (7, 5)	B2	B1 for translation correct in one direction
13 (a)	$\frac{1734}{6}$ or $\sqrt{\frac{1734}{6}}$ or 289	M1	
	17	A1	
13 (b)	their 17^3	M1	
	4913	A1ft	

Q	Answer	Mark	Comments
14	0.8 or $\frac{8}{10}$ or $\frac{10}{8}$ seen	M1	oe
	$4 \times \frac{8}{10}$	M1dep	oe
	3.2	A1	oe
15	30 seen	B1	
	$25 \times 10 \times 30$	M1	
	$25 \times 10 \times 30 \div 250$	M1dep	oe
	30	A1	
16 (a)	$(c + 3)(c + 1)$	B2	B1 for $c^2 + 3c + c + 9$ or $-2c - 6$ or $c^2 + 4c + 3$ or $(c + 3)(c + 3 - 2)$ oe
16 (b)	$4x + 4y (= 7y - 5)$	M1	
	$4x = 3y - 5$	M1	oe
	$x = \frac{3y - 5}{4}$	A1	oe
16 (c)	Never true	B1	
	Sometimes true	B1	
17	$(3x)^2 + (4x)^2 = 35^2$ or $9x^2 + 16x^2 = 35^2$	M1	Hypotenuse = $5x$ seen or implied
	$\frac{35^2}{25}$ or 49	M1	$5x = 35$
	$\sqrt{\frac{35^2}{25}}$ or 7	M1	
	$3 \times 7 + 4 \times 7 + 35$ or $12 \times 7 (= 84)$	A1	oe
17 Alt	Tests $x = 7$ in Pythagoras $21^2 + 28^2 = 35^2$	M1	
	$3x + 4x + 35 = 84$	M1	Uses perimeter to get $x = 7$
	$7x = 49$	M1	
	$x = 7$	A1	Must test in Pythagoras to be valid

Q	Answer	Mark	Comments
18	$\frac{1.99 \times 10^{30}}{5.98 \times 10^{24}}$	M1	
	332775.9 (...)	A1	
	333 000 or 330 000 or 300 000 or 3.33×10^5 or 3.3×10^5 or 3×10^5	B1ft	
19	$\frac{(- -)6 \pm \sqrt{6^2 - 4 \times 5 \times -2}}{10}$	M1	Allow 1 error
	$\frac{(- -)6 \pm \sqrt{6^2 - 4 \times 5 \times -2}}{10}$	A1	fully correct
	1.47 and -0.27	A1	
20	805 or 795 seen	B1	
	111.5 or 112.5 seen	B1	
	$\frac{805}{111.5}$ or $\frac{\text{their max}}{\text{their min}}$	M1	
	7.2(1...) or 7.22	A1	
	m/s	B1	
21	32° or 58° seen	B1	
	$\cos 32 = \frac{h}{7.1}$ or $\sin 58 = \frac{h}{7.1}$	M1	oe
	(h =) 6.02 (...) or 7.1 cos 32 or 7.1 sin 58	A1	
	$\frac{9.6 + 6.4}{2} \times \text{their } h$	M1	
	48.1(69 ...)	A1ft	
22	$\frac{28}{45} \times \frac{27}{44}$	M1	Allow one error in 2 nd fraction
	$\frac{28}{45} \times \frac{27}{44}$ or $\frac{756}{1980}$	A1	oe
	$\frac{21}{55}$	A1	

Q	Answer	Mark	Comments
23	Completion of vertical scale 0.6, 1.2, 1.8, 2.4, 3.0, 3.6, 4.2, 4.8	M1	
	10×3.6 or 5×1.8 or 15×0.6	M1	
	$10 \times 3.6 + 5 \times 1.8 + 15 \times 0.6$ or 54	M1	
	$54 + 36 + 42 + 24$ or 156	M1	
	$\frac{54}{156}$ or $\frac{9}{26}$	A1	
23 Alt 1	$42 \div 14$	M1	
	3 per cm square	M1	
	$(12 + 3 + 3) (\times 3)$ or 18 $12 \times 3 + 3 \times 3 + 3 \times 3$ or 54	M1	
	$(8 + 14 + 24 + 3 + 3) \times 3$ or 52 or 156	M1	
	$\frac{18}{52}$ or $\frac{54}{156}$	A1	
23 Alt 2	one of 40, 70, 120, 15 or 9 seen	M1	
	two of 40, 70, 120, 15 or 9 seen	M1	
	$60 + 15 + 15$ or 90	M1	
	$40 + 70 + 120 + 15 + 15$ or 260	M1	
	$\frac{90}{260}$ or $\frac{9}{26}$	A1	
24	$\frac{4}{x} + \frac{7}{x-3} = \frac{1}{2}$	M1	oe
	$4(x-3)$ or $8(x-3)$ or $7x$ or $14x$	M1	oe
	$8(x-3) + 14x = x^2 - 3x$	M1	oe
	$x^2 - 25x + 24 = 0$	A1	
	$(x-24)(x-1) (= 0)$	A1	
	$(x =) 24$	Q1	Strand (iii) Value chosen that makes $\frac{4}{x}$ and $\frac{7}{x-3}$ between 0 and 1