

Edexcel

GCSE

Mathematics

SET B – Foundation Tier

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F

Answers

Key to abbreviations used within the answers

M method mark (e.g. M1 means 1 mark for method)

A accuracy mark (e.g. A1 means 1 mark for accuracy)

B independent marks that do not require method to be shown (e.g. B2 means 2 independent marks)

dep dependent on previous mark

ft follow through

oe or equivalent

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Paper 1

Question	Answer	Mark	Comments
1	3500	B1	
2 (a)	7	B1	
(b)	7	B1	
3 (a)	4	B1	
(b)	11	B1	
(c)	4.25 + 2.75 + 1.5 or 8.5 or 17×2	M1	
	34	A1	
(d)	38 or 2 seen	M1	
	$\frac{1}{2}$ a circle drawn	A1	
4 (a)	985	B1	
(b)	167	B1	
(c)	138	B1	
(d)	32	B1	
5	2 and 5	B2	B1 for either answer and one wrong value, e.g. 2 and 7 B1 for both answer and one other value, e.g. 1, 2, 5
6 (a)	07:24	B1	
(b)	$36 + 1 + 05$	M1	
	1 h 41 m	A1	
(c)	09:16 seen or $16 + 20$	B1	
	36 m	B1	
7	Clear method shown (column, box, Chinese, partition)	M1	
	Correct partial calculation, e.g. 720, 48, 640, 128 or 3 out of 4 correct cells in box or Chinese methods	A1	
	768	A1	

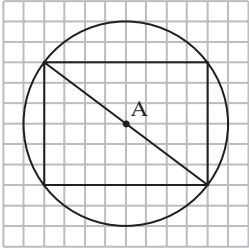
Question	Answer	Mark	Comments
8 (a)	4 correct plots	B2	B1 for 3 correct plots or 4 plots with coordinates reversed.
(b)	Parallelogram	B1	
(c)	4×6	M1	
	24 cm^2	A1	
9	$\frac{5}{15}$ or $\frac{9}{15}$	M1	
	$\frac{5}{15}$ and $\frac{9}{15}$ and explanation that 8 is between 5 and 9	A1	
10 (a)	$8a$	B1	
(b)	$6m$ or $30m$	M1	
	$36m$	A1	
11 (a)	[37, 37.5]	B1	
(b)	40 (hectares)	M1	
	$40 \times 25\ 000$	M1dep	
	£1 000 000	A1	
12	$\frac{4}{7} \times 56$ or $\frac{9}{11} \times 66$	M1	
	32 or 54	A1	
	86	A1	
13 (a)	Mark at $\frac{1}{3}$	B1	
(b)	3 odd and 3 even numbers	B1	e.g. 2, 3, 5, 6, 7, 8 is B2 2, 3, 4, 5, 6, 8 is B1 2, 3, 4, 5, 7, 8 is B1 2, 3, 5, 6, 7, 9 is B0
	2 multiples of 3	B1	
14	ABC or $ACB = 80$	M1	
	$ACD = 100$	M1dep	
	40°	A1	

Question	Answer	Mark	Comments
15	$360 \div 36 = 10$	M1	
	Angles calculated as 70, 80, 100, 50 and 60	M1dep	
	Angles accurately drawn	A1	
	Sectors labelled	A1	
16	$\pi \times 10^2 \times 8$	M1	
	$800\pi \text{ cm}^3$	A1	
17	$6x - 12 + 8 = x$	M1	
	$5x = 4$	M1dep	
	$x = 0.8$ oe	A1	
18	Area any face, i.e. 20×5 or 100 etc.	M1	
	$2 \times 100 + 2 \times 50 + 2 \times 200$	M1dep	
	700 cm^2	A1	
19	$4x + 4 - 6x + 8$	M1	M1 for 3 terms correct
	$4x + 4 - 6x + 8$	A1	A1 for 4 terms correct
	$-2x + 12$	A1ft	ft on M1, e.g. $4x + 1 - 6x - 8 = -2x - 7$ is M1, A0, A1ft
20	$2x + 100 = 180$	M1	
	$360 \div 40$	M1dep	
	9	A1	
21 (a)	-1.5 and 3	B2	B1 each answer
	(b) (0.75, -6.1)	B1	
22 (a)	230 000	B1	
	(b) 5×10^{-4}	B1	
	(c) 1.6×10^8	B2	B1 for 16×10^7
23	$2n > -11$	M2	M1 for $2n > 3$ or $2n > -3$ or $4n > -11$
	$n > -5.5$	A1ft	ft on M1, e.g. $n > 1.5$

Question	Answer	Mark	Comments
24	$\frac{3}{4}$	B1	
25	$x + 2 = 2x - 1$	M1	
	$x = 3$	A1	
	$3 + 2$ or $2 \times 3 - 1$	M1dep	
	5	A1	
	25	A1	

Paper 2

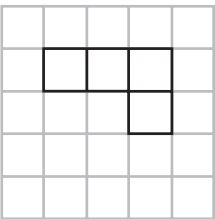
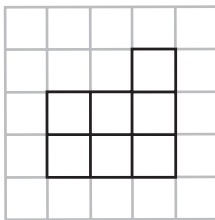
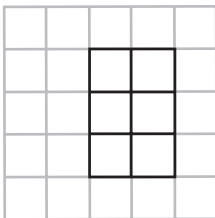
Question	Answer	Mark	Comments
1 (a)	Any multiple of 40, e.g. 40	B1	
	(b) 100	B1	
2	$x - 4$	B1	
3	103	B1	
4 (a)	7645	B1	
	(b) Any 2 numbers shown, e.g. 4675, 4657 etc.	M1	
	6	A1	
5 (a)	B and F	B1	
	(b) 4	B1	
	(c) 2	B1	
	(d) Reflex	B1	
6 (a)	7.48 or 748 seen	M1	
	£2.52	A1	
	(b) £2, 50p, 2p	B2ft	ft least number of coins for their answer for (a) B1 for any correct combination of coins but not least number
7 (a)	280	B1	
	(b) 3900	B1	
8 (a)	Add 4 each time	B1	
	(b) 25	B1ft	ft their rule
	(c) 34	B1	
	(d) $5n - 2$	B1	

Question	Answer	Mark	Comments
9	Marks on diagram showing counting of 13 whole squares within or 33 outside shape	M1	
	Explanation that area must be between these limits	A1	
10 (a)	19	B1	
	(b) 10	B1	
	(c) 0.55×60 oe	M1	
	33	A1	
	Bar drawn to 33	A1	
	(d) $28 + 19 + 38 +$ their week 4 or 118	M1	
	240 seen	B1	
	0.5×240 or 120	M1	
	Correct conclusion based on their total (No if correct)	A1	
11		B3	B1 for circle B1 for rectangle (may be a different orientation) B1 for either diagonal (allow both drawn)
12 (a)	26	B1	
(b)	32	B1	
13 (a)	3.6	B1	
(b)	402.(2...)	B1	
(c)	Either value rounded to 1 sf e.g. 100 or 20	M1	
	$10 + 400 = 410$	A1	
14	$\frac{7}{20}$	B2	B1 for 7 seen
15 (a)	$4 + 7 \times 2.25 + 8 \times 0.75$	M1	Allow mixed units
	25.75	A1	


Question	Answer	Mark	Comments
(b)	$21.25 - 6 \times 2.25 - 4$ or 3.75	M1	Allow mixed units
	Their $3.75 \div 0.75$	M1dep	
	5	A1	
16 (a)	$x^2 - 2x + 3x - 6$	M1	4 terms, with one in x^2 , 2 in x and a constant term
	$x^2 + x - 6$	A1	
	$(x + a)(x + b)$ where $ab = \pm 3$	M1	
	$(x + 1)(x + 3)$	A1	
17 (a)	Correct reflection, i.e. (5, -3), (1, -3), (5, -5)	B2	B1 for reflection in $x = -1$
	(b) Correct translation, i.e. (-2, -3), (2, -3), (2, -1)	B2	B1 for correct translation of one vector component
18	$6^2 + 11^2$	M1	
	$\sqrt{157}$	M1dep	
	12.5...	A1	
19	$5 \times 145 + 9 \times 155 + 12 \times 165 + 8 \times 175 + 6 \times 185$ or 6610	M1	
	$6610 \div 40$	M1dep	
	165.25	A1	
20 (a)	Any product including a prime that makes 28	M1	
	$2 \times 2 \times 7$ or $2^2 \times 7$	A1	
	(b) $2 \times 2 \times 5 \times 7$	M1	
	140	A1	
21	$4(x + 4) = 26$	M1	
	$4x = 10$	M1dep	
	2.5	A1	
22	0.85	B1	
	$238 \div 0.85$	M1	
	280	A1	

Question	Answer	Mark	Comments
23	$36 \div 3$ or 12	M1	
	2×12 or 5×12	M1dep	
	24 and 60	A1	
24	$\sqrt{\frac{402}{\pi}}$ or 11.3...	M1	
	$11.3 \times \pi + 2 \times 11.3$	M1dep	
	[58, 58.2]	A1	
25	Arc from A cutting given ray	M1	
	Arc centred on intersection and crossing original arc plus line drawn.	A1	Angle must be between [58, 62]

Paper 3

Question	Answer	Mark	Comments
1 (a)	0	B1	
	(b) 2	B1	
2	19.5 or 20.5 seen	B1	
	$19.5 \leq l < 20.5$	B1	
3	<p>Plan</p>  <p>Front Elevation</p>  <p>Side Elevation</p> 	B3	B1 each Accept front and side elevation labelled the other way round
4	1, 2, 4, 5 10, 20	B2	B1 for 4 or 5 factors
5	Diameter	B1	

Question	Answer	Mark	Comments
6	$3 \times 4 \times 2$	M1	
	24	A1	
7 (a)	16	B1	
	(b) 4	B2	B1 for 100 B1 for 0.4
8 (a)	5×4.50	M1	
	£22.50	A1	
	$3 \times 3.50 + 3.00 + 2.00 + 1.00$	M1	M1 for 5 people identified and off peak prices
	$3 \times 3.50 + 3.00 + 2.00 + 1.00$	A1	All six identified and off peak prices
	£16.50	A1	16.5 is A0 SC2 for 21
	$20 \times 4.50 - 55$	M1	
	£35	A1	
9	$98 \div 7$ or 14	M1	
	42 or 56	A1	
	Tom 20, 10, 10, 2 Jerry 50, 5, 1	A1	Either order
10	$56 \div 8$	M1	
	7	A1	
11	$180 - 67 - 38$	M1	
	75°	A1	
12 (a)	$3 \times 8 \times 6$ or 144 or $3 \times 2 \times 4$ or 24	M1	
	$144 \div 24 (= 6)$	A1	
	$720 \div 144$ or 5 (layers)	M1	
	Small 12	A1	
	Large 3	A1	
13	$350 \div 79$ or $750 \div 185$	M1	Allow mixed units
	4.43... or 4.05...	A1	
	small packet	A1	

Question	Answer	Mark	Comments
14	30 mins or 0.5 hours	B1	
	75 km	B1	
	60 km/h	B1	
15 (a)	More ice cream sold as temperature increases	B1	
(b)	Line of best fit	M1	
	480	A1ft	ft their line of best fit
16	17 or 37	B2	B1 for 26, 50, 65 or 82
17	1.03	B1	
	3000×1.03^3	M1	
	3278.18	A1	
18 (a)	x^9	B1	
(b)	x^{10}	B1	
19	$\begin{pmatrix} 10 \\ 4 \end{pmatrix}$	B2	B1 for each component
20	30	B1	
	38	B1	
21		B2	B1 for any enlargement that reduces the size of the shape and keeps the sides in relative ratio. B1 for any 3 sides correct.
22	-2, -1, 0, 1, 2, 3	B2	B1 for -3, -2, -1, 0, 1, 2, 3 B1 for -2, -1, 0, 1, 2, 3, 4
23 (a)	A and C	B1	
(b)	A and D	B1	
24	C A B	B2	B1 for 1 correct
25	$1.5 \div 2$	M1	
	0.75	A1	

Question	Answer	Mark	Comments
26	$3x + 2y = 2$ and $3x + 12y = 27$ or $6x + 4y = 4$ and $x + 4y = 9$	M1	
	$x = -1$	A1	
	$y = 2.5$	A1	
27 (a)	$\frac{4}{10}$ marked on red and $\frac{6}{10}$ marked on blue	B1	
(b)	$\frac{4}{10} \times \frac{4}{10}$ or $\frac{6}{10} \times \frac{6}{10}$	M1	
	$\frac{4}{10} \times \frac{4}{10} +$ $\frac{6}{10} \times \frac{6}{10}$	M1dep	
	0.52	A1	oe
28	2	B1	
	-3	B1	
29 (a)	$(x + 5)(x - 5)$	B1	
(b)	$x^2 + 4x + 4$ or $x^2 + 2x + 1$	M1	$(x + 2 + x + 1)$ $(x + 2 - (x + 1))$
	$x^2 + 4x + 4 - (x^2 + 2x + 1)$	M1dep	$(2x + 3)(1)$
	Shows subtraction of terms clearly	A1	
30 (a)	$12 \times \sin 32 = 6.359...$	B1	
(b)	$\pi \times 6.36 \times 12$	M1	
	[236.6, 240]	A1	