

GCSE Mathematics (9-1) Practice Tests Set 8 – Paper 3F mark scheme

Question	Working	Answer	Mark	Notes
1		72.2	1	B1
2	18, 36, 54, 72, 90, 108, 126, 144, 162, 180, ...	e.g. 18, 36	1	B1 Any two multiples of 18
3		70	1	B1
4		$25 + 3 \times (7 - 2) = 40$	1	B1 Correct brackets
5		8607	1	B1
<i>Total 5 marks</i>				
6	(i)	tangent	1	B1 Condone incorrect spelling if meaning clear.
	(ii)	radius	1	B1 Condone incorrect spelling if meaning clear.
	(iii)	chord	1	B1 Condone incorrect spelling if meaning clear.
<i>Total 3 marks</i>				
7	(a)	3, 7, 5, 3, 2	2	B2 For all correct frequencies B1 for 3 or 4 correct frequencies or at least 3 correct tallies
	(b)	1	1	B1ft From table
	(c)	$\frac{3}{20}$	1	B1ft From table oe
<i>Total 4 marks</i>				

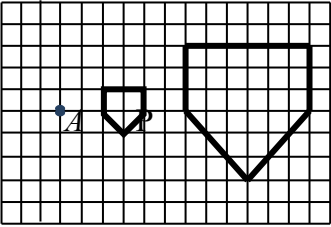
Question	Working	Answer	Mark	Notes
8 (a)		Kazan	1	B1 Accept -12
(b)		15	1	B1 Accept -15
(c)		11	1	B1
Total 3 marks				
9	$40 - 19.50 (= 20.5(0))$ or $40 - 8.56 (= 31.44)$	6	4	M1 Correct method to find money left after taking away cost of rake or change
	$40 - 19.50 - 8.56 (= 11.94)$			M1 Correct method to find money left after taking away cost of rake & change
	"11.94" ÷ 1.99			M1 A fully correct method to find number of packets of seed
				A1
Total 4 marks				
10 (i)		B	1	B1 Accept $\frac{3}{12}$ oe
(ii)		E	1	B1 Accept $\frac{9}{12}$ oe
(iii)		F	1	B1 Accept 1
(iv)		A	1	B1 Accept 0
Total 4 marks				

Question	Working	Answer	Mark	Notes
11 (a)		130	1	B1
(b)		8 19 pm	1	B1 Accept 20 19
Total 3 marks				
12 (a)	$\frac{360}{240} (=1.5)$ oe or $\frac{38}{240}$	57	2	M1 For a correct method to find angle for 1 throw or fraction of full circle A1
(b)	$\frac{250}{100} \times 360$ oe or $60 \times 2.5 + 80 \times 2.5 + 250 + 70 \times 2.5 + 50 \times 2.5$ $(=150 + 200 + 250 + 175 + 125)$	900	2	M1 For a correct method to find number of spins A1
Total 4 marks				
13 (a)		$3t$	1	B1
(b)		$15pq$	1	B1
(c)		$4y - 20$	1	B1
(d)	$8x = 5 \times 9.2$ or $8x = 46$ or $\frac{x}{5} = \frac{9.2}{8}$	5.75	2	M1 Clearing fraction or dividing by 8 A1 oe 46/8 etc
Total 5 marks				

Question	Working	Answer	Mark	Notes
14 (a)	$0.5 \times (22 + 25) \times 12$ oe	282	2	M1 Correctly substituting values into formula for area of trapezium
				A1
Total 2 marks				
15 (a)		10	1	B1
(b)	$7 \div 0.5$ or 7 km in 0.5 hours oe	14	2	M1
				A1
(c)		“Horizontal” line from (2 10, 16) to (2 50, 16) “Diagonal” line from (2 50, 16) to (3 50, 0)	2	M1 For correct horizontal line or diagonal line with negative gradient to (3 50, 0)
				A1 Fully correct graph
Total 5 marks				
16	$360 \div 1.25 (= 288)$ or $425 \times 0.72 (= 306)$	18	3	M1
				M1
				A1 cao
Total 3 marks				

Question	Working	Answer	Mark	Notes	
17	$39\,000 \div 3 (=13\,000)$ oe	9	5	M1 $\frac{1}{3} \times 39\,000$ oe	M2 for $\frac{2}{3} \times 39\,000$
	$39\,000 - '13\,000' (=26\,000)$ oe			M1	
	$0.55 \times 5\,300 (=2915)$ oe			M1 A correct method to find 55% of 5 300	
	"26 000"÷"2915" (=8.919...)			M1 A correct method to find the number of weeks A1	
Total 5 marks					
18		2 , 20, 29	3	M2 for 3 number selected with at least two of the properties: mean = 17, median = 20, range = 27 else M1 with one of these properties	
				A1 in any order	
Alternative					
18	$17 \times 3 (=51)$	2 , 20, 29	3	M1 method to find sum of 3 numbers	
	$17 \times 3 - 20 (=31)$			M1 method to find sum of smallest and largest numbers	
				A1 in any order	
Alternative					
18	$x, 20, z$ or x, y, z and $y = 20$	2 , 20, 29	3	M1 use of different letters with 20 shown as the middle value	
	$x + z = 31$ or $\frac{x + 20 + z}{3} = 17$ oe			M1 an equation for the sum or for the difference of the two unknown numbers	
	or $z - x = 27$ or $x - z = 27$			A1 in any order	
Total 3 marks					

Question	Working	Answer	Mark	Notes
19 (a)(i)		67	1	B1
(ii)		<u>reason</u>	1	B1 dep on B1 or a fully correct method shown in (i) e.g. <u>alternate angles</u> are equal or other fully correct method
(b)	e.g. $180 - (67 + 60)$ or $120 - 67$ or $(180 - 67) - (180 - 120)$ or $113 - 60$ or $180 - 67 = 60 + y$ or $113 = 60 + y$ or $120 - y = 67$	53	2	M1 Correct calculation for y or correct equation in y , or $BFC = 60^\circ$ and $BCF = 67^\circ$ or $ABF = 60^\circ$ and $BCF = 67^\circ$ or $ABF = 60^\circ$ and $ABC = 113^\circ$
Total 4 marks				
20	$(0 \times 2) + 1 \times 7 + 2 \times 3 + 3 \times 4 + 4 \times 3 + 5 \times 1$ $(0 +) 7 + 6 + 12 + 12 + 5$	42	2	M1 For at least 4 correct products seen with the intention to add.
Total 2 marks				
21	$\frac{6}{100} \times 8.50$ or 0.06×8.50 or 0.51 or 51p 8.50 + "0.51"	9.01	3	M1 M1 dep A1 M2 for 1.06×8.50 oe
Total 3 marks				

Question	Working	Answer	Mark	Notes	
22 (a)		A correct enlargement in the correct position	2	M1 Enlargement of given shape by SF 3 anywhere on grid or completely correct enlargement by SF 2 A1 Fully correct	
(b)		Rotation (Centre) (0,0) 90° clockwise or	3	B1 B1 <i>O</i> or origin B1 -90°, 270°	If more than one transformation mentioned then no marks
Total 5 marks					

Question	Working	Answer	Mark	Notes
23	$\cos A = \frac{43}{70}(=0.6142)$ or $\sin B = \frac{43}{70}(=0.6142)$	142	4	M1 $\cos B = \frac{55.23\dots}{70}, \sin A = \frac{55.23\dots}{70}$
	$A = \cos^{-1}\left(\frac{43}{70}\right)$ or $B = \sin^{-1}\left(\frac{43}{70}\right)$			M1 $A = \sin^{-1}(0.7890\dots) B = \cos^{-1}(0.7890\dots)$
	$A = 52.1^\circ$ or $B = 37.9^\circ$			A1 $52^\circ - 52.1^\circ$ or $37.9^\circ - 38^\circ$ SC B1 If M0 M0 A0 award B1 for 52.1° or 37.9° not identified as A or as B
				B1 ft for an angle identified as A or B Correct bearing (142 – 142.1)
Total 4 marks				
24 (a)		m^{11}	1	B1
(b)		$27a^6b^{12}$	2	B2 fully correct B1 for 2 of the three terms correct in a product.
(c)	$4g - 8h + 10g - 15h$	$14g - 23h$	2	M1 Expanding brackets with 3 of 4 terms correct. A1 Fully correct
(d)	$y^2 - 7y + 5y - 35$	$y^2 - 2y - 35$	2	M1 Any 3 terms correct or 4 correct terms ignoring signs or $y^2 - 2y +/\dots$ or $\dots - 2y - 35$ A1
Total 7 marks				

Question	Working	Answer	Mark	Notes
25	eg $280 = 2 \times 140 = 2 \times 2 \times 70 (= 2 \times 2 \times 2 \times 35 = 2 \times 2 \times 2 \times 5 \times 7)$ eg $280 = 10 \times 28 = 2 \times 5 \times 28 (= 2 \times 5 \times 2 \times 14 = 2 \times 5 \times 2 \times 2 \times 7)$	$2 \times 2 \times 2 \times 5 \times 7$	3	M1 for at least 2 correct steps in repeated factorisation (may be seen in a tree diagram)
	2, 2, 2, 5, 7			A1dep For all correct factors, may include 1
				A1dep Must see correct method Accept $2^3 \times 5 \times 7$
				Total 3 marks

Practice Tests Set 8 – Paper 3F

Question	Skills tested	Mean score	Max score	Mean %	Edexcel averages:	Mean score of students achieving grade					
					ALL	C / 4					G / 1
Q01		0.65	1	65	0.65	0.91					0.15
Q02		0.28	1	28	0.28	0.49					0.10
Q03		0.80	1	80	0.80	0.93					0.30
Q04		0.69	1	69	0.69	0.82					0.35
Q05		0.66	1	66	0.66	0.90					0.25
Q06i		0.45	1	45	0.45	0.65					0.15
Q06ii		0.71	1	71	0.71	0.91					0.10
Q06iii		0.33	1	33	0.33	0.51					0.10
Q07a		1.70	2	85	1.70	1.93					1.00
Q07b		0.53	1	53	0.53	0.78					0.00
Q07c		0.66	1	66	0.66	0.91					0.10
Q08a		0.94	1	94	0.94	0.99					0.55
Q08b		0.77	1	77	0.77	0.93					0.50
Q08c		0.78	1	78	0.78	0.93					0.40
Q09		2.55	4	64	2.55	3.62					0.85
Q010i		0.60	1	60	0.60	0.85					0.10
Q010ii		0.65	1	65	0.65	0.89					0.10
Q010iii		0.77	1	77	0.77	0.91					0.15
Q010iv		0.90	1	90	0.90	0.98					0.20
Q011a		0.57	1	57	0.57	0.74					0.15
Q011b		0.40	1	40	0.40	0.63					0.20
Q12a		0.55	2	28	0.55	1.26					0.00
Q12b		0.51	2	26	0.51	1.13					0.00

Q13a		0.76	1	76	0.76	0.87				0.45
Q13b		0.76	1	76	0.76	0.87				0.55
Q13c		0.77	1	77	0.77	0.97				0.20
Q13d		1.17	2	59	1.17	1.79				0.10
Q14		1.29	2	65	1.29	1.83				0.15
Q15a		0.76	1	76	0.76	0.92				0.25
Q15b		0.34	2	17	0.34	0.84				0.00
Q15c		1.22	2	61	1.22	1.70				0.05
Q16		1.72	3	57	1.72	2.37				0.30
Q17		2.50	5	50	2.50	3.99				0.05
Q18		0.92	3	31	0.92	1.92				0.05
Q19ai		0.48	1	48	0.48	0.74				0.00
Q19aii		0.06	1	6	0.06	0.12				0.00
Q19b		0.43	2	22	0.43	0.79				0.00
Q20		0.96	2	48	0.96	1.58				0.00
Q21		1.54	3	51	1.54	2.46				0.15
Q22a		0.57	2	28	0.57	1.07				0.00
Q22b		0.91	3	30	0.91	1.50				0.25
Q23		0.33	4	8	0.33	0.87				0.00
Q24a		0.79	1	79	0.79	0.94				0.35
Q24b		0.55	2	28	0.55	1.00				0.00
Q24c		1.19	2	60	1.19	1.64				0.35
Q24d		0.86	2	43	0.86	1.53				0.10
Q25		1.48	3	49	1.48	2.32				0.05
		39.81	80	50	39.81	58.23				9.20

Suggested Grade Boundaries based on performance of students in Summer 2018

5	4	3	2	1
66	50	34	17	9