

Practice Tests Set 14 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
1		0.2	1	B1
2		7	1	B1
3		$5cd$	1	B1
4		60	1	B1 allow 60%
5		3000	1	B1
6	e.g. $\frac{6}{10}, \frac{9}{15}, \frac{12}{20}, \frac{15}{25}, \frac{18}{30}, \frac{21}{35}$		2	M1 for any fraction equivalent to $\frac{24}{40}$ with denominator less than 40
		$\frac{3}{5}$		A1
7	$3 \times 4 + 2 \times 7$ or $12 + 14$		2	M1
8	a	New York	1	B1 accept -15
	b	25	1	B1 accept -25
	c	-28	1	B1
				Total 3 marks

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Q	Working	Answer	Mark	Notes	
9	(a)	100	1	B1	
	(b)	$1\frac{3}{4}$ pictures	1	B1	
	(c)	$2\frac{1}{2} + 3\frac{1}{4} + 5 + 4\frac{1}{4} + 1\frac{3}{4} (= 16\frac{3}{4})$ oe or $2\frac{1}{2} \times 20 + 3\frac{1}{4} \times 20 + 5 \times 20 + 4\frac{1}{4} \times 20 + 35 (= 335)$ or $50 + 65 + 100 + 85 + 35 (= 335)$		3	M1 ft from (b) for adding up the number of squares or finding the total number of books – allow one error or omission
		$500 - '16\frac{3}{4}' \times 20$ oe or $500 - '335'$			M1 ft
			165		A1
				Total 5 marks	
10	a	26 or 64	1	B1 or both 26 and 64 with no others	
	b	21 or 39	1	B1 or both 21 and 39 with no others	
	c	17 or 31	1	B1 or both 17 and 31 with no others	
	d	1 or 64	1	B1 or both 1 and 64 with no others	
					Total 4 marks
11		$6k + 11m$	2	B2 If not B2 then award B1 for $6k$ or $11m$	

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12	a	$(3, -1)$	1	B1
	b	(\times) at $(-2, -4)$	1	B1 condone missing label as long on unambiguous
	c	$(-1, 2)$	2	B2 B1 for $(-1, a)$ where $a \neq 2$ or $(b, 2)$ where $b \neq -1$
	d	$x = 4$ drawn	1	B1
				Total 5 marks
13	(a)	cylinder	1	B1
	(b)(i)	6	1	B1
	(b)(ii)	8	1	B1
	(c)	$20 \times 8 \times 11$	2	M1
		1760		A1
				Total 5 marks
14	(a)	2, 4, 6, 12	1	B1
	(b)		2	M1 for $\frac{a}{14}$ with $a < 14$ or $\frac{3}{b}$ with $b > 3$ or for 3 and 14 used with incorrect notation e.g. 3 : 14
		$\frac{3}{14}$		A1 for $\frac{3}{14}$ oe or 0.214(...)
				Total 3 marks

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Q	Working	Answer	Mark	Notes
15		$\frac{3}{10}$ oe	1	B1
16 a			2	M1 for at least 2 correct tallies or frequencies
		2, 5, 4, 3, 2		A1 mark frequencies only – in either column
b		1	1	B1 allow ft from (a)
c		4	1	B1
				Total 4 marks
17 (a)		pentagon	1	B1
(b)		85	1	B1 for 83 – 87
(c)		parallel sides marked	1	B1 No additional sides marked

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Q	Working	Answer	Mark	Notes														
18	<table border="1"> <tr> <td>x</td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>y</td> <td>15</td> <td>11</td> <td>7</td> <td>3</td> <td>-1</td> <td>-5</td> </tr> </table> (-2, 15) (-1, 11) (0, 7) (1, 3) (2, -1) (3, -5)	x	-2	-1	0	1	2	3	y	15	11	7	3	-1	-5	Correct line between $x = -2$ and $x = 3$	3	B3 for a correct line between $x = -2$ and $x = 3$ (B2 for a correct straight line segment through at least 3 of (-2, 15) (-1, 11) (0, 7) (1, 3) (2, -1) (3, -5) or for all of (-2, 15) (-1, 11) (0, 7) (1, 3) (2, -1) (3, -5) plotted but not joined) (B1 for at least 2 correct points stated (may be in a table) or plotted or for a line drawn with a negative gradient through (0, 7) or for a line with a gradient of -4)
x	-2	-1	0	1	2	3												
y	15	11	7	3	-1	-5												
				Total 3 marks														
19 (c)		$T = 6g + 12h$	3	B3 for $T = 6g + 12h$ oe (B2 for $6g + 12h$ oe or $T = 6g + ah$ or $T = bg + 12h$ or $T = 12g + 6h$ oe) (B1 for $6g + ah$ or $bg + 12h$ or $12g + 6h$ or for an incorrect expression in g and h eg $T = g + h$)														
				Total 3 marks														

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Q	Working	Answer	Mark	Notes
20	a	1, 3, 9	1	B1 need all three but ignore any repeats
	b		2	M1 for listing at least three multiples of 15 and 70 or finding the prime factors of 15 and 70 (could be factors at the ends of branches of factor trees or lists 3, 5 and 2, 5, 7) or a correct calculation or the correct values for the LCM eg 2,3,5,7 or 3,5,14 oe (could be in a table)
		210		A1
				Total 3 marks
21		(3,5) (5,5) (5,8)	2	B2 If not B2 then award B1 for a reflection in $x = 2$ [(1,-1) (-1,-1) (-1,-4)] or for correct shape in the correct orientation

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Q	Working	Answer	Mark	Notes
22 (a)	$\frac{2}{5} \times \frac{20}{11}$ or eg $\frac{8}{20} \div \frac{11}{20}$		2	M1 For inverting $\frac{11}{20}$ and a clear intention to multiply or for writing both fractions correctly over the same common denominator
	$\frac{2}{5} \times \frac{20}{11} = \frac{40}{55} = \frac{8}{11}$ or $\frac{2}{\cancel{5}^1} \times \frac{\cancel{20}^4}{11} = \frac{8}{11}$ or $\frac{8}{20} \div \frac{11}{20} = \frac{8}{11}$	Clearly shown		A1 dep on M1 continued to clearly show given result
				Total 2 marks
(b)	$\frac{9n}{24n} + \frac{1n}{24n}$ or $\frac{9n+1n}{24n}$		2	M1 for correct fractions with a common denominator (multiple of 24)
	eg $\frac{10}{24} = \frac{5}{12}$	Shown		A1 for a multiple of $\frac{10n}{24n} = \frac{5}{12}$
23	$20 - 5x (= 7 - 3x)$		3	M1 for expansion of bracket
	E.g. $20 - 7 = -3x + 5x$ or $-5x + 3x = 7 - 20$			M1 ft from a 4-term equation for a correct process of isolating terms in x on one side of the equation and numbers on the other side
		6.5 oe		A1 dep on M2 awarded

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Q	Working	Answer	Mark	Notes
24			3	B1 Rotation (with none of reflection, translation, enlargement, mirrored, flipped or moved (up, right, left, down etc) stated)
				B1 (centre) (0,0) or origin (O) (award if no vector or equation of line or SF mentioned)
		Rotation of 90° anticlockwise about (0,0)		B1 90° anticlockwise or 270° clockwise
				Total 3 marks
25	$4x > 2 - 7$ oe or $x + \frac{7}{4} > \frac{2}{4}$ oe		2	M1 accept as an equation or with wrong inequality sign.
		$x > -1.25$		A1 oe allow (-1.25, (+) ∞) Note: award M1A0 for an answer of -1.25 with no sign or the incorrect sign eg $x = -1.25$, $x < -1.25$
				Total 5 marks

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Q	Working	Answer	Mark	Notes
26	eg $4x + 3y = 17$ – $4x + 8y = 20$ or eg $4(5 - 2y) + 3y = 17$	eg $8x + 6y = 34$ – $3x + 6y = 15$ or eg $4x + 3 \times \frac{1}{2}(5 - x) = 17$	3	M1 Correct method to eliminate x or y : coefficients of x or y the same and correct operation to eliminate selected variable (condone any one arithmetic error in multiplication) or writing x or y in terms of the other variable and correctly substituting
	eg $4x + 3 \times 0.6 = 17$ or $x + 2 \times 0.6 = 5$	eg $4 \times 3.8 + 3y = 17$ or $3.8 + 2y = 5$		M1 (dep) correct method to find second variable – could start process again or use substitution
		$x = 3.8$ $y = 0.6$		A1 oe for both solutions dep on first M1
				Total 3 marks
27	$c + h = 5y$ or $\frac{c}{5} = y - \frac{h}{5}$ or $\frac{c+h}{5}$		2	M1
		$y = \frac{c+h}{5}$		A1 oe if the student puts $\frac{c+h}{5}$ on the answer line then if we have previously see $y = \frac{c+h}{5}$ we can award full marks

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Q	Working	Answer	Mark	Notes
28			2	M1 for any correct partial factorisation with at least 2 factors, one of which must be a letter or the correct common factor with no more than 1 error inside the bracket
		$8m^2 g^3(2m + 3g^2)$		A1
29 a		g^{10}	1	B1
b		$9c^2d^8$	2	B2 B1 for 2 out of 3 terms correct as part of a product
30 (a)	$(y \pm 6)(y \pm 8)$		2	M1
		$(y - 8)(y + 6)$		A1
(b)		8, -6	1	B1 must fit from their factors in (c)(i)
				Total 3 marks

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Edexcel averages: scores of candidates who achieved grade:

Qn	Skill tested	Mean score	Max score	Mean %	Edexcel averages: scores of candidates who achieved grade:					
					ALL	5	4	3	2	1
1	Fractions	0.93	1	93	0.93	0.98	0.98	0.90	0.80	0.82
2	Linear equations	0.92	1	92	0.92	0.99	0.97	0.94	0.81	0.61
3	Algebraic manipulation	0.88	1	88	0.88	0.97	0.95	0.87	0.72	0.58
4	Decimals	0.85	1	85	0.85	0.98	0.92	0.81	0.69	0.42
5	Measures	0.75	1	75	0.75	0.89	0.82	0.63	0.66	0.36
6	Fractions	1.82	2	91	1.82	1.96	1.90	1.82	1.70	1.33
7	Expressions and formulae	1.71	2	86	1.71	1.96	1.83	1.70	1.42	0.70
8	Integers	2.52	3	84	2.52	2.87	2.75	2.53	2.02	1.02
9	Graphical representation of data	4.19	5	84	4.19	4.74	4.46	4.13	3.78	2.01
10	Powers and roots	3.20	4	80	3.20	3.65	3.37	3.17	2.62	1.91
11	Expressions and formulae	1.56	2	78	1.56	1.92	1.66	1.49	1.19	0.48
12	Graphs	3.41	5	68	3.41	4.46	3.79	2.94	2.00	1.08
13	3D shapes and volume	3.63	5	73	3.63	4.52	3.76	3.38	2.45	1.82
14a	Set language and notation	0.70	1	70	0.70	0.82	0.75	0.69	0.58	0.30
14b	Set language and notation	0.97	2	49	0.97	1.43	1.04	0.84	0.39	0.12
15	Fractions	0.58	1	58	0.58	0.85	0.62	0.52	0.22	0.00
16	Statistical measures	2.51	4	63	2.51	2.92	2.63	2.53	1.76	1.39
17	Angles, lines and triangles	1.65	3	55	1.65	2.19	1.81	1.50	0.81	0.45
18	Graphs	1.46	3	49	1.46	2.37	1.65	0.97	0.36	0.18
19	Expressions and formulae	1.51	3	50	1.51	2.29	1.54	1.26	0.70	0.15
20	Integers	1.47	3	49	1.47	2.20	1.50	1.09	0.73	0.64
21	Transformation geometry	0.98	2	49	0.98	1.53	0.97	0.72	0.53	0.27
22a	Fractions	0.92	2	46	0.92	1.54	0.91	0.56	0.43	0.33
22b	Fractions	0.83	2	42	0.83	1.51	0.78	0.43	0.36	0.18
23	Linear equations	1.25	3	42	1.25	2.24	1.07	0.74	0.50	0.33
24	Transformation geometry	0.95	3	32	0.95	1.53	1.02	0.78	0.16	0.12
25	Inequalities	0.64	2	32	0.64	1.24	0.52	0.38	0.15	0.15
26	Simultaneous linear equations	0.81	3	27	0.81	1.88	0.64	0.20	0.12	0.06
27	Expressions and formulae	0.62	2	31	0.62	1.45	0.35	0.22	0.14	0.06
28	Algebraic manipulation	0.37	2	19	0.37	0.91	0.24	0.11	0.02	0.00
29a	Use of symbols	0.76	1	76	0.76	0.94	0.81	0.70	0.55	0.30

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29b	Use of symbols	0.34	2	17	0.34	0.78	0.24	0.13	0.05	0.00
30	Quadratic equations	0.37	3	23	0.37	1.04	0.15	0.06	0.02	0.00
	TOTAL	46.06	80	58	46.06	62.55	47.40	39.74	29.44	18.17

Suggested grade boundaries

Grade	5	4	3	2	1
Mark	50	43	35	24	15