

**Practice Tests Set 23 – Paper 1F mark scheme**

Qn	Working	Answer	Mark	Notes
1		7	1	B1
				<b>Total 1 mark</b>

Qn	Working	Answer	Mark	Notes
2		80	1	B1
				<b>Total 1 mark</b>

Qn	Working	Answer	Mark	Notes
3		$10 + 15h$	1	B1
				<b>Total 1 mark</b>

Qn	Working	Answer	Mark	Notes
4		18	1	B1 Look in body of script if nothing on answer line
				<b>Total 1 mark</b>

Qn	Working	Answer	Mark	Notes
5 (a)		USA	1	B1
(b)		Pictogram completed with 1 and a half symbols	1	B1
(c)	$11 + 7$ oe eg $(2.75 + 1.75) \times 4$		2	M1 For two numbers added together, one of which is correct
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	18		A1
				<b>Total 4 marks</b>

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Qn		Working	Answer	Mark	Notes
6	(a)		Hamlet	1	B1
	(b)		Henry V and Julius Caesar	1	B1
	(c)		26 450	1	B1
	(d)		Twenty one thousand and fifty five	1	B1
					<b>Total 4 marks</b>

Qn		Working			Answer	Mark	Notes														
7	(a)(i)				A cross at 0.5	1	B1														
	(ii)				unlikely	1	B1														
	(b)	<table border="1"> <thead> <tr> <th>Type of rice</th> <th>Tally</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>arborio</td> <td>IIII</td> <td>4</td> </tr> <tr> <td>basmati</td> <td>IIII I</td> <td>6</td> </tr> <tr> <td>jasmine</td> <td>IIII II</td> <td>7</td> </tr> <tr> <td>wild</td> <td>III</td> <td>3</td> </tr> </tbody> </table>	Type of rice	Tally	Frequency	arborio	IIII	4	basmati	IIII I	6	jasmine	IIII II	7	wild	III	3			2	B2 for all frequencies correct (B1 for 2 frequencies correct or 2 tallies correct or 1 tally with its frequency correct)
Type of rice	Tally	Frequency																			
arborio	IIII	4																			
basmati	IIII I	6																			
jasmine	IIII II	7																			
wild	III	3																			
							<b>Total 4 marks</b>														

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Qn	Working	Answer	Mark	Notes
8 (a)		$45pk$	1	B1 accept $45kp$
(b)		$11e - 5f$	2	B2 for $11e - 5f$ (B1 for $11e$ or $-5f$ )
(c)	$2d = 16 - 7$ or $2d = 9$ or $d + \frac{7}{2} = \frac{16}{2}$ oe or $(16 - 7) \div 2$ or $9 \div 2$		2	M1
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	4.5		A1 accept $\frac{9}{2}$ or $4\frac{1}{2}$
				<b>Total 5 marks</b>

Qn	Working	Answer	Mark	Notes
9 (a)		3567	1	B1
(b)		7536	1	B1
(c)		37 or 53 or 73 or 67	1	B1
(d)		56	1	B1
				<b>Total 4 marks</b>

Qn	Working	Answer	Mark	Notes
10 (a)		line of length 6.5 cm drawn	1	B1 $\pm 2$ mm
(b)		44	1	B1 Accept answers in the range 42-46 including decimals and fractions
				<b>Total 2 marks</b>

Qn	Working	Answer	Mark	Notes
11		$c^5$	1	B1
				<b>Total 1 mark</b>

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Qn	Working	Answer	Mark	Notes
12 (a)		554 correctly indicated	1	B1 Arrow or other mark shown clearly at 554 (2nd notch to right of 550)
(b)		3250	1	B1
				<b>Total 2 marks</b>

Qn	Working	Answer	Mark	Notes
13		169	1	B1
				<b>Total 1 mark</b>

Qn	Working				Answer	Mark	Notes		
14 (a)				<b>Spinner A</b>		Correct scores	2	B2 for all scores correct (B1 for 3 or 4 scores correct)	
				<b>1</b>	<b>2</b>				<b>3</b>
	<b>Spinner B</b>	<b>1</b>	1	2	3				
		<b>2</b>	2	4	6				
		<b>3</b>	3	6	9				
<b>4</b>		4	8	12					
(b)					$\frac{4}{12}$	1	B1 ft oe accept 0.33(33...)		
				<b>Total 3 marks</b>					

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Qn	Working	Answer	Mark	Notes
15		3 hours 40 minutes	2	B2 Accept 220 min or $3\frac{2}{3}$ hours (B1 for 3 (hours) or for 40 (minutes) or for an answer such as 2 hours 100 minutes)
				<b>Total 2 marks</b>

Qn	Working	Answer	Mark	Notes
16		0.04 0.042 0.2 0.204 0.24	1	B1
				<b>Total 1 mark</b>

Question	Working	Answer	Mark	Notes
17			3	B3 Fully correct (B2 for 2 or 3 'regions' correct, B1 for one 'region' correct)
				<b>Total 3 marks</b>

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Qn	Working	Answer	Mark	Notes
18	e.g. $\frac{21}{24} - \frac{10}{24}$ or $\frac{84}{96} - \frac{40}{96}$ or $\frac{21n}{24n} - \frac{10n}{24n}$		2	M1 for finding a common denominator of 24 or a multiple of 24 with at least one fraction correct
	e.g. $\frac{21}{24} - \frac{10}{24} = \frac{11}{24}$ $\frac{84}{96} - \frac{40}{96} = \frac{44}{96} = \frac{11}{24}$ or $\frac{21n}{24n} - \frac{10n}{24n} = \frac{11n}{24n} = \frac{11}{24}$	Shown		A1 dep on M1, for a complete method leading to $\frac{11}{24}$
				<b>Total 2 marks</b>

Qn	Working	Answer	Mark	Notes
19	18 -- 3 × 5 or 18 -- 15 or 18 + 15		2	M1
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	33		A1
				<b>Total 2 marks</b>

Qn	Working	Answer	Mark	Notes
20		25.79	1	B1
				<b>Total 1 mark</b>

Qn	Working	Answer	Mark	Notes
21		3	1	B1
				<b>Total 1 mark</b>

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Qn	Working	Answer	Mark	Notes
22		$g(g + 7)$	1	B1
				<b>Total 1 mark</b>

Qn	Working	Answer	Mark	Notes														
23	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td><i>x</i></td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td><i>y</i></td> <td>5</td> <td>3</td> <td>1</td> <td>-1</td> <td>-3</td> <td>-5</td> </tr> </table> <p>(-2, 5) (-1, 3) (0, 1) (1, -1) (2, -3) (3, -5)</p>	<i>x</i>	-2	-1	0	1	2	3	<i>y</i>	5	3	1	-1	-3	-5	<p>Correct line between  <math>x = -2</math>                      and  <math>x = 3</math></p>	3	<p>B3 for a correct line between <math>x = -2</math> and <math>x = 3</math></p> <p>(B2 for a correct straight line segment through at least 3 of (-2, 5) (-1, 3) (0, 1) (1, -1) (2, -3) (3, -5)</p> <p><b>or</b>                      for all of (-2, 5) (-1, 3) (0, 1) (1, -1) (2, -3) (3, -5) plotted but not joined)</p> <p>(B1 for at least 2 correct points stated (may be in a table) <b>or</b> plotted <b>or</b> for a line drawn with a negative gradient through (0, 1) <b>or</b> for a line with a gradient of -2)</p>
<i>x</i>	-2	-1	0	1	2	3												
<i>y</i>	5	3	1	-1	-3	-5												
				<b>Total 3 marks</b>														

**Practice Tests Set 23 – Paper 1F mark scheme**

<b>Qn</b>	<b>Working</b>	<b>Answer</b>	<b>Mark</b>	<b>Notes</b>
24 (a)		Correct rotation	2	B2 for a fully correct rotation at (1, 2) (3, 2) (3, 5)  (B1 for the triangle in correct orientation and size or rotated 90° clockwise about the origin (-1, -2) (-3, -2) (-3, -5))
(b)		Enlargement, scale factor 3 and (0,0)	2	B2 for enlargement, scale factor 3 and (0,0)  (B1 for 2 correct from  for enlargement, enlarge, etc so long as no mention of rotation, reflection or translation, flip, move etc.  or  SF 3, three times etc.  or  (0, 0) or Origin or 0 stated. Accept about, from etc. with no mention of line, or column vector.)
				<b>Total 4 marks</b>



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Qn	Working	Answer	Mark	Notes
25	$\frac{26}{7}, \frac{13}{8}$		3	M1 both fractions expressed as improper fractions, no need for $\div$ or $\times$ may be equivalent to those given eg $\frac{52}{14}$ or $\frac{26}{16}$ etc. A student could invert $\frac{13}{8}$ and show multiplication - as shown in the 2nd M1, this mark is then implied.
	$\frac{26}{7} \times \frac{8}{13}$ oe or eg $\frac{208}{56} \div \frac{91}{56}$			M1 <b>or</b> for both fractions expressed as equivalent fractions with denominators that are a common multiple of 7 and 8 eg $\frac{208}{56} \div \frac{91}{56}$
	eg $\frac{26}{7} \times \frac{8}{13} = \frac{208}{91} = \frac{16}{7} = 2\frac{2}{7}$ <b>or</b> $\frac{26}{7} \times \frac{8}{13} = \frac{208}{91} = 2\frac{26}{91} = 2\frac{2}{7}$ <b>or</b> $\frac{26^2}{7} \times \frac{8}{13^1} = \frac{16}{7} = 2\frac{2}{7}$ <b>or</b> $\frac{26}{7} \div \frac{13}{8} = \frac{208}{56} \div \frac{91}{56} = \frac{208}{91} = \frac{16}{7} = 2\frac{2}{7}$ <b>or</b> correct working to $\frac{16}{7}$ <b>and</b> writing $2\frac{2}{7} = \frac{16}{7}$ <i>working required</i>	shown		A1 dep on M2  NB: use of decimals scores no marks (unless used as a check)
				<b>Total 3 marks</b>

Question	Working	Answer	Mark	Notes
26		1	1	B1
				<b>Total 1 mark</b>

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Qn	Working	Answer	Mark	Notes
27	$6 - 12x$ or $2 - 4x = \frac{5}{3} - \frac{8}{3}x$		3	M1 for expansion of bracket on the LHS or dividing the RHS by 3 with two terms
	$6 - 5 = 12x - 8x$ or $1 = 4x$ or $-12x + 8x = 5 - 6$ oe or $-4x = -1$ or $\frac{8}{3}x - 4x = \frac{5}{3} - 2$ oe or $2 - \frac{5}{3} = -\frac{8}{3}x + 4x$ oe			M1 ft (dep on 4 terms) for terms in $x$ on one side of equation; number terms on the other
	<i>Working required</i>	$\frac{1}{4}$		A1 oe dep on M1 awarded
				<b>Total 3 marks</b>

Qn	Working	Answer	Mark	Notes
28	$d - 10 = 3x$ oe or $-3x = -d + 10$ or $\frac{d}{3} = x + \frac{10}{3}$ oe or $\frac{d - 10}{3}$ oe		2	M1
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	$x = \frac{d - 10}{3}$		A1 accept $x = \frac{d}{3} - \frac{10}{3}$ oe or $x = \frac{-d + 10}{-3}$ oe (must see $x = \dots$ on answer line or in working)
				<b>Total 2 marks</b>

Qn	Working	Answer	Mark	Notes
29	Two pairs of intersecting arcs with equal radii centre $A$ and $B$		2	M1 for arcs that intersect within or on the guidelines <b>or</b> correct perpendicular bisector without arcs.
	<i>Working required</i>	Bisector with construction arcs		A1 for a fully correct bisector with two intersecting arcs
				<b>Total 2 marks</b>

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Question	Working	Answer	Mark	Notes	
30	eg $5x + 4y = -2$ $+ 8x - 4y = 17.6$ $(13x = 15.6)$ eg $[x = \frac{4.4 + y}{2}]$ oe $5\left(\frac{4.4 + y}{2}\right) + 4y = -2$ oe	eg $10x + 8y = -4$ $- 10x - 5y = 22$ $(13y = -26)$ eg $[y = 2x - 4.4]$ oe $5x + 4(2x - 4.4) = -2$ oe		3	M1 multiplication of one or both equation(s) with correct operation selected (allow one arithmetic error) (if + or - is not shown then assume it is the operation that at least 2 of the 3 terms have been calculated for) <b>or</b> correct rearrangement of one equation with substitution into second
	eg $5 \times "1.2" + 4y = -2$ <b>or</b> $2 \times "1.2" - y = 4.4$	eg $5x + 4 \times "-2" = 4.4$ <b>or</b> $2x - "-2" = 4.4$			M1 (dep on previous M1 but not on a correct first value) correct method to find second unknown – this could be a correct substitution into one of the equations given or calculated or starting again with the same style of working as for the first method mark
	<i>Working required</i>	$x = 1.2$ $y = -2$			A1 oe eg $x = \frac{6}{5}$ for both solutions dependent on first M1
					<b>Total 3 marks</b>

Question	Working	Answer	Mark	Notes
31		$27a^6b^{12}$	2	B2 (B1 for 2 of 3 parts in a product)
				<b>Total 2 marks</b>

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Question	Working	Answer	Mark	Notes
32		$7x^2y^2(2y^2 + 3x)$	2	B2 B1 for a correct factorisation with at least 2 factors outside (eg $7x$ , $x^2$ , $xy$ , etc) eg $7x(2xy^4 + 3x^2y^2)$ eg $x^2y^2(14y^2 + 21x)$ or for the correct common factor with just one mistake inside the bracket eg $7x^2y^2(2y + 3x)$ which is missing the squared on the $y$ term
				<b>Total 2 marks</b>

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Question	Working	Answer	Mark	Notes
33	$(54 - 24) \div 2 (=15)$ [may be marked on diagram]		5	M1
	$"15" - (24 \div 2) (= 81)$			M1 ft their "15" (if > 12)
	[height =] $\sqrt{"15" - (24 \div 2) (= 9)}$			M1 ft their "15" (if > 12)
	$(24 \times "9") \div 2$ oe			M1 figures must be from correct working
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	108		A1 allow 107.9 – 108.1
	<b>ALTERNATIVES BELOW</b>			<b>Total 5 marks</b>
	$(54 - 24) \div 2 (=15)$ [may be marked on diagram]		5	M1
	<p>or <math>x = \cos^{-1}\left(\frac{"12"}{"15"}\right) (= 36.86\dots)</math></p> <p>or <math>y = \sin^{-1}\left(\frac{24 \div 2}{"15"}\right) (= 53.13\dots)</math></p> <p>or <math>A = \cos^{-1}\left(\frac{15^2 + 15^2 - 24^2}{2 \times 15 \times 15}\right) (= 106.2\dots)</math></p> <p>or <math>B = \cos^{-1}\left(\frac{15^2 + 24^2 - 15^2}{2 \times 15 \times 24}\right) (= 36.8\dots)</math></p>			<p>M1 ft their "15" (if &gt; 12)</p> <p>[ using Hero's formula <math>S = 0.5 \times 54 (= 27)</math> and ]  <math>27 \times (27 - 24) \times (27 - "15") \times (27 - "15")</math></p>
	<p>or "12"tan"36.86..." (= 9) (allow 8.9... for these)</p> <p>"12" ÷ tan"53.13..." (= 9)</p> <p>or "15" × sin "36.86..." (= 9)</p> <p>or "15" × cos "53.13..." (= 9)</p>			<p>M1 ft their "15" (if &gt; 12)</p> <p>M2 for  <math>0.5 \times 24 \times "15" \times \sin"36.86\dots"</math> or  <math>0.5 \times "15" \times "15" \times \sin(2 \times "53.13\dots")</math> or  <math>0.5 \times "15" \times "15" \times \sin("106.2\dots")</math> or  <math>\sqrt{"27"("27" - 24)("27" - "15")("27" - "15")}</math></p>
	$(24 \times "9") \div 2$ oe			M1
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	108		A1 allow 107.9 – 108.1
				<b>Total 5 marks</b>

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Qn	Working	Answer	Mark	Notes
34		thousandth	1	B1 oe e.g. 3 thousandth, $1000^{\text{th}}$ , $\frac{1}{1000}$ $\frac{3}{1000}$ , 0.003
				<b>Total 1 mark</b>

Question	Working	Answer	Mark	Notes
35	$y = mx + 4$ where $m \neq 0$ oe (eg $y = 2x + 4$ ) <b>or</b> $y = -2x + c$ or $y + 2x = c$ oe <b>or</b> $-2x + 4$ or $f(x) = -2x + 4$ oe		2	M1
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	$y = -2x + 4$		A1 oe eg $y + 2x = 4$
				<b>Total 2 marks</b>

**Practice Tests Set 23 – Paper 1F mark scheme**

Qn	Skill tested	Mean score	Max score	Mean %	Edexcel averages: scores of candidates who achieved grade:						
					ALL	5	4	3	2	1	U
1	Linear equations	0.94	1	94	0.94	0.99	0.98	0.95	0.92	0.85	0.46
2	Percentages	0.84	1	84	0.84	0.98	0.95	0.86	0.73	0.44	0.20
3	Algebraic manipulation	0.76	1	76	0.76	0.98	0.91	0.74	0.58	0.18	0.03
4	Linear equations	0.75	1	75	0.75	0.96	0.89	0.75	0.56	0.21	0.11
5	Graphical representation of data	3.79	4	95	3.79	3.93	3.90	3.80	3.74	3.52	2.26
6	Integers	3.80	4	95	3.80	3.94	3.89	3.84	3.74	3.52	2.54
7	Probability	3.44	4	86	3.44	3.81	3.66	3.48	3.15	2.62	1.84
8	Linear equations	3.91	5	78	3.91	4.79	4.54	4.00	3.13	1.67	0.74
9	Integers	3.12	4	78	3.12	3.77	3.46	2.97	2.61	1.99	1.15
10	Angles, lines and triangles	1.55	2	78	1.55	1.87	1.72	1.53	1.23	1.00	0.38
11	Algebraic manipulation	0.72	1	72	0.72	0.88	0.84	0.71	0.58	0.33	0.16
12	Integers	1.48	2	74	1.48	1.80	1.65	1.43	1.24	0.94	0.40
13	Powers and roots	0.75	1	75	0.75	0.83	0.81	0.78	0.66	0.49	0.23
14	Probability	2.02	3	67	2.02	2.61	2.29	1.97	1.53	0.98	0.47
15	Measures	1.32	2	66	1.32	1.75	1.5	1.24	0.93	0.63	0.31
16	Decimals	0.62	1	62	0.62	0.86	0.75	0.59	0.43	0.18	0.07
17	Set language and notation	1.77	3	59	1.77	2.53	2.13	1.63	1.12	0.44	0.03
18	Fractions	1.10	2	55	1.10	1.88	1.40	0.84	0.43	0.16	0.04
19	Expressions and formulae	1.13	2	56	1.13	1.72	1.39	1.05	0.63	0.15	0.03
20	Degree of accuracy	0.56	1	56	0.56	0.90	0.68	0.50	0.28	0.12	0.01
21	Powers and roots	0.51	1	51	0.51	0.79	0.62	0.45	0.28	0.06	0.02
22	Algebraic manipulation	0.47	1	47	0.47	0.83	0.59	0.34	0.16	0.02	0.00
23	Graphs	1.34	3	45	1.34	2.40	1.68	1.03	0.46	0.08	0.00
24	Transformation geometry	1.69	4	42	1.69	2.79	2.06	1.35	0.82	0.38	0.11
25	Fractions	1.05	3	35	1.05	2.06	1.29	0.63	0.31	0.09	0.02
26	Powers and roots	0.36	1	36	0.36	0.66	0.42	0.24	0.17	0.08	0.02
27	Linear equations	1.11	3	37	1.11	2.14	1.22	0.81	0.46	0.18	0.04
28	Expressions and formulae	0.60	2	30	0.60	1.48	0.60	0.25	0.12	0.01	0.00
29	Construction	0.51	2	26	0.51	1.03	0.58	0.33	0.19	0.04	0.01
30	Simultaneous linear equations	0.76	3	25	0.76	1.89	0.78	0.33	0.08	0.01	0.00
31	Powers and roots	0.44	2	22	0.44	0.95	0.50	0.21	0.11	0.01	0.00
32	Algebraic manipulation	0.47	2	24	0.47	1.19	0.47	0.19	0.05	0.00	0.00
33	Mensuration of 2D shapes	1.25	5	25	1.25	2.86	1.16	0.68	0.40	0.19	0.07
34	Decimals	0.12	1	12	0.12	0.18	0.14	0.09	0.10	0.03	0.01

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Qn	Skill tested	Mean score	Max score	Mean %	Edexcel averages: scores of candidates who achieved grade:						
					ALL	5	4	3	2	1	U
35	Graphs	0.26	2	13	0.26	0.77	0.17	0.09	0.03	0.00	0.00
	<b>TOTAL</b>	<b>45.31</b>	<b>80</b>	<b>57</b>	<b>45.31</b>	<b>63.80</b>	<b>50.62</b>	<b>40.68</b>	<b>31.96</b>	<b>21.60</b>	<b>11.76</b>

**Suggested grade boundaries**

Grade	5	4	3	2	1
Mark	57	46	36	27	17