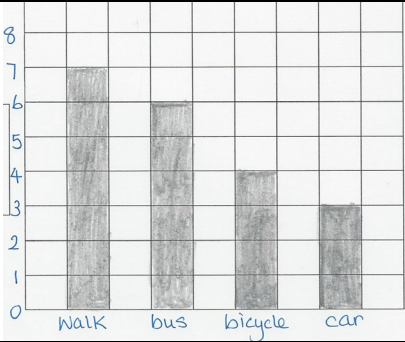


Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
1		78	1	B1 cao
				Total 1 mark
2		$\frac{57}{100}$	1	B1 cao
				Total 1 mark
3		2	1	B1 cao
				Total 1 mark
4		$\frac{6}{7}$	1	B1 cao
				Total 1 mark
5		$4\frac{2}{5}$	1	B1 cao
				Total 1 mark

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes															
6 (a)		<table border="1" data-bbox="1128 256 1411 416"> <thead> <tr> <th>Transport</th> <th>Tally</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>walk</td> <td> </td> <td>7</td> </tr> <tr> <td>bus</td> <td> </td> <td>6</td> </tr> <tr> <td>bicycle</td> <td> </td> <td>4</td> </tr> <tr> <td>car</td> <td> </td> <td>3</td> </tr> </tbody> </table>	Transport	Tally	Frequency	walk		7	bus		6	bicycle		4	car		3	2	B2 for all correct frequencies (B1 for 2 or 3 correct frequencies or 2, 3 or 4 correct tallies with no frequencies (or incorrect frequencies) or frequencies written as probabilities with 2, 3 or 4 correct numerators)
Transport	Tally	Frequency																	
walk		7																	
bus		6																	
bicycle		4																	
car		3																	
(b)		 <p>A bar chart with a vertical axis labeled from 0 to 8 in increments of 1. The horizontal axis has four categories: 'walk', 'bus', 'bicycle', and 'car'. The bars represent the following frequencies: walk (7), bus (6), bicycle (4), and car (3). The bars are shaded grey and have different widths.</p>	3	B2 For 4 correct bars ft from table (B1 ft for 2 or 3 correct bars ft from table)															
				B1 For clear labels for bars and linear scale starting at 0 oe Condone bars of different widths															
				Total 5 marks															

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
7 (a)		$\frac{13}{30}$	1	B1 accept 0.43(333...) or 43(.333...)%
(b)	e.g. $1 - \frac{7}{30}$ or $\frac{13+4+6}{30}$ or $\frac{23}{a}$ where $a > 23$ and $a \neq 30$		2	M1
		$\frac{23}{30}$		A1 accept 0.76(666...) or 0.77 or 76(.666...) % or 77%
				penalise incorrect notation once only
				Total 3 marks

8	(a)		14	1	B1
	(b)		-19	1	B1
					Total 2 marks

9		26	1	B1
				Total 1 mark

10 (a)		$13x - 2y$	2	B2 accept $-2y + 13x$ (B1 for $13x$ or $-2y$)
(b)	$2n = 16 - 5$ or $2n = 11$ oe or $(16 - 5) \div 2$		2	M1 for a correct first step or a correct calculation for n
		5.5		A1 for 5.5 or $\frac{11}{2}$ or $5\frac{1}{2}$
				Total 4 marks

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes	
11	(a)		44	1	B1
	(b)		6	1	B1
	(c)		36	1	B1
	(d)		17	1	B1
	(e)		8, 76	1	B1 Must have both and no others
				Total 5 marks	

12		$20cd$	1	B1
				Total 1 mark

13		eg 76% (25%) 7.66% (8%) 2.6% or (0.76) 0.25 (0.0766) 0.08 (0.026)		2	M1 All values written as % or all written as decimals or 4 values in correct order or all values in correct reverse order
			0.026, 0.0766, 8%, 25%, 0.76		A1 Any form
				Total 2 marks	

14		e^5	1	B1
				Total 1 mark

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
15	$0.3 \times 30 (= 9)$ or $\frac{1}{3} \times 30 (= 10)$ or $\frac{1}{3} + \frac{30}{100} \left(= \frac{19}{30} \right)$ oe or $0.333\dots + 0.3 (= 0.63\dots)$ or $33.3\dots(\%) + 30(\%)$ oe $(= 63.3\dots)(\%)$		3	M1 Allow 9 squares clearly indicated for 30% or 10 squares clearly indicated for $\frac{1}{3}$
	“9” and “10” or 19 shaded squares on diagram or $\left(1 - \frac{19}{30} \right) \times 30$ or $(1 - 0.63\dots) \times 30$			M1 Allow squares with crosses or other indication of ‘shading’ such as ‘y’ or ‘b’
		11		A1
				Total 3 marks

16	(a)(i)		Three different numbers less than or equal to 9	1	B1	cao e.g. 1, 2, 3 or 3, 6, 9
	(a)(ii)		Three different multiples of ten	1	B1	cao e.g. 10, 20, 30 or 20, 40, 60
	(b)		A cross at 0.5	1	B1	cao
						Total 3 marks

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes																												
17	(a)	<table border="1"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>0</td> </tr> <tr> <td>7</td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> </tr> <tr> <td>8</td> <td>7</td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> </tr> </table>		1	2	3	4	5	6	6	5	4	3	2	1	0	7	6	5	4	3	2	1	8	7	6	5	4	3	2	2	B2 B2 for all scores completed correctly. B1 for 6, 7, 8 or 9 scores completed correctly
		1	2	3	4	5	6																									
	6	5	4	3	2	1	0																									
7	6	5	4	3	2	1																										
8	7	6	5	4	3	2																										
(b)		$\frac{15}{18}$	1	B1ft oe ($\frac{5}{6}$ or 0.83(33...) or 83.(33..)%) ft from complete table																												
(c)		$\frac{9}{18}$	1	B1ft oe Penalise incorrect notation once only ft from complete table																												
				Total 4 marks																												

18		$4x - x^2$	1	B1
				Total 1 mark

19		$6p$	1	B1
				Total 1 mark

20		12	1	B1
		8	1	B1
				Total 2 marks

21		$8y^2$	1	B1
				Total 1 mark

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
22		3, 7, 8, 8 and one of 4 or 5 or 6		B3 For a list of 5 correct numbers (B2 for a list of 5 numbers with 2 of: median of 7, mode of 8, range of 5 B1 for a list of 5 or 6 numbers with 1 of: median of 7, mode of 8, range of 5)
				Total 3 marks

23	(c)	Two intersecting arcs with equal radius		2	M1 For arcs that intersect within guidelines or correct equilateral triangle drawn without arcs
			Correct equilateral triangle with arcs		A1
					Total 2 marks

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
24	e.g. $\frac{20}{24}$ and $\frac{9}{24}$ or $\frac{40}{48}$ and $\frac{18}{48}$ or $\frac{20n}{24n}$ and $\frac{9n}{24n}$		2	M1 for finding a common denominator with at least one fraction correct
	$\frac{20}{24} - \frac{9}{24} = \frac{11}{24}$ $\frac{40}{48} - \frac{18}{48} = \frac{22}{48} = \frac{11}{24}$ $\frac{20n}{24n} - \frac{9n}{24n} = \frac{11n}{24n} = \frac{11}{24}$	Shown		A1 dep on M1, for a complete correct method leading to $\frac{11}{24}$
				Total 2 marks

25		$3(3t - 2)$	1	B1
				Total 1 mark

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
26 (a)		Reflection $x = 1$	2	B1 for reflection with no mention of translate, rotate, enlarge, move
				B1 for $x = 1$ with no mention of a vector, angle or scale factor
(b)		Rotation about (0,0) 90° clockwise	3	B1 for rotation with no mention of translate, reflect, enlarge, move
				B1 for 90° clockwise/270° anticlockwise/−90° with no mention of a vector, line of symmetry or scale factor
				B1 for (centre =) (0,0), accept origin or O with no mention of a vector, line of symmetry or scale factor Do not accept $\begin{pmatrix} 0 \\ 0 \end{pmatrix}$ for centre
				Total 5 marks

27 (a)		2.84×10^9	1	B1
(b)		0.000 25	1	B1
				Total 2 marks

28		$8x^2 + 20x - 6x^2 + 9x$	2	M1 3 correct terms or all 4 terms condoning incorrect signs
				A1
				Total 2 marks

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
29 (i)		21, 27	1	B1
(ii)		21, 23, 24, 25, 27, 29	1	B1
				Total 2 marks
30 (b)	$y^5 \times y^n = y^{19}$ or $y^{-1} \times y^n = y^{13}$ or $5 + n - 6 = 13$		2	M1 Use of 1 rule of indices or a correct equation in n
		14		A1 Accept y^{14}
				Total 2 marks
31 (c)	$y + e = dx$ oe or $\frac{y}{x} = d - \frac{e}{x}$		2	M1 for a correct first step
		$d = \frac{y+e}{x}$		A1 oe e.g. $d = \frac{y}{x} + \frac{e}{x}$
				Total 2 marks
32 (a)		$16x^{12}y^{20}$	2	B2 B1 for an answer in the form ax^ny^m with 2 correct from $a = 16, n = 12, m = 20$
(b)(i)	$(x \pm 9)(x \pm 4)$		2	M1 for $(x \pm 9)(x \pm 4)$ or for $(x + a)(x + b)$ where $ab = -36$ or $a + b = 5$
		$(x + 9)(x - 4)$		A1
(ii)		-9, 4	1	B1 ft from (b)(i)
				Total 5 marks

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes
33 (a)		$5y^3(3y + 4u)$	2	B2 for $5y^3(3y + 4u)$ (B1 for $5y(3y^3 + 4uy^2)$ or $5y^2(3y^2 + 4uy)$ or $y^2(15y^2 + 20uy)$ or $y^3(15y + 20u)$ or $5y^3(\dots)$ where there is only one mistake in the brackets)
(b)	$4 \times (4 - 3x) = 5 - 8x$ oe or $16 - 12x = 5 - 8x$ oe or $4 - 3x = \frac{5}{4} - 2x$ oe		3	M1 for removal of fraction in a correct equation
	e.g. $16 - 5 = 12x - 8x$ or $11 = 4x$ oe or $4 - \frac{5}{4} = 3x - 2x$			M1 for terms in x on one side and numbers on the other side in an equation, allow correct rearrangement of their equation in the form $ax + b = cx + d$
		2.75		A1 (dep on M1) oe e.g. $2\frac{3}{4}$ or $\frac{11}{4}$
				Total 5 marks

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Q	Working	Answer	Mark	Notes	
34	(c)(i)	$7t - 2t < 7 + 8$ oe eg $5t < 15$ oe		M1	Terms in t on one side and number terms the other side – may be in an equation or the incorrect inequality sign or an answer of $t = 3$ or eg $t \geq 3$
				A1	Must be a correct inequality given as answer
	(ii)		open circle at $t = 3$ and a line with an arrow to the left	1	B1ft Allow a line without an arrow if it reaches to at least -5 , with an arrow it can be any length
				Total 3 marks	

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

Qn	Paper	Question	Mean score	Max score	Mean %	ALL	5	4	3	2	1	U
1	1F	Q04e	0.91	1	91	0.91	0.99	0.97	0.91	0.73	0.56	0.14
2	1F	Q04a	0.93	1	93	0.93	0.99	0.95	0.96	0.88	0.61	0.29
3	1F	Q04b	0.89	1	89	0.89	0.98	0.91	0.88	0.74	0.57	0.36
4	1F	Q04c	0.87	1	87	0.87	0.97	0.91	0.87	0.70	0.53	0.14
5	1F	Q04d	0.72	1	72	0.72	0.95	0.79	0.62	0.34	0.13	0.07
6	2F	Q02	4.61	5	92	4.61	4.85	4.71	4.61	4.22	3.63	1.78
7	1F	Q15	2.47	3	82	2.47	2.90	2.77	2.44	1.57	0.65	0.00
8	2F	Q03	1.82	2	91	1.82	1.93	1.84	1.83	1.68	1.27	0.66
9	2F	Q07e	0.89	1	89	0.89	0.97	0.92	0.87	0.76	0.61	0.44
10	1F	Q07	3.26	4	82	3.26	3.85	3.64	2.97	2.25	1.24	0.36
11	2F	Q01	4.32	5	86	4.32	4.83	4.51	4.17	3.49	2.55	0.99
12	2F	Q07d	0.85	1	85	0.85	0.93	0.85	0.81	0.76	0.69	0.22
13	2F	Q04b	1.53	2	77	1.53	1.85	1.62	1.34	1.03	0.67	0.44
14	2F	Q07c	0.78	1	78	0.78	0.91	0.81	0.73	0.59	0.33	0.00
15	2F	Q04a	2.19	3	73	2.19	2.78	2.40	1.91	1.17	0.54	0.22
16	1F	Q02	2.30	3	77	2.30	2.59	2.36	2.25	1.99	1.41	0.28
17	2F	Q09	2.99	4	75	2.99	3.54	3.13	2.73	2.16	1.36	0.44
18	1F	Q12a	0.68	1	68	0.68	0.91	0.76	0.57	0.28	0.12	0.00
19	2F	Q07a	0.76	1	76	0.76	0.88	0.75	0.67	0.63	0.64	0.22
20	2F	Q06ab	1.48	2	74	1.48	1.68	1.44	1.47	1.28	0.95	0.55
21	2F	Q07b	0.68	1	68	0.68	0.87	0.71	0.59	0.39	0.24	0.00
22	2F	Q16	1.69	3	56	1.69	2.47	1.84	1.15	0.48	0.14	0.00
23	2F	Q06c	1.21	2	61	1.21	1.59	1.22	1.07	0.61	0.36	0.11
24	1F	Q16	1.14	2	57	1.14	1.75	1.20	0.73	0.28	0.03	0.00
25	2F	Q07g	0.54	1	54	0.54	0.84	0.58	0.26	0.13	0.05	0.00
26	1F	Q14	2.21	5	44	2.21	3.50	2.12	1.42	0.56	0.27	0.07
27	1F	Q22	0.85	2	43	0.85	1.45	0.81	0.41	0.17	0.03	0.00
28	2F	Q19a	0.70	2	35	0.70	1.10	0.69	0.41	0.17	0.11	0.00
29	1F	Q20	0.65	2	33	0.65	1.03	0.66	0.38	0.17	0.04	0.00
30	2F	Q19b	0.67	2	34	0.67	1.28	0.59	0.15	0.07	0.00	0.00
31	1F	Q12c	0.67	2	34	0.67	1.29	0.50	0.23	0.06	0.00	0.00
32	1F	Q25	1.12	5	22	1.12	2.22	0.85	0.27	0.08	0.00	0.00

Practice Tests Set 16 – Paper 1F mark scheme, performance data and suggested grade boundaries

33	1F	Q21	1.09	5	22	1.09	2.19	0.71	0.30	0.17	0.03	0.00
34	2F	Q19c	0.78	3	47	0.78	1.56	0.51	0.18	0.11	0.06	0.00
			49.25	80		49.25	63.42	50.03	41.16	30.70	20.42	7.78

Suggested grade boundaries

Grade	5	4	3	2	1
Mark	58	45	36	25	15