

**Practice Tests Set 21 – 1F mark scheme**

Q	Working	Answer	Mark	Notes
1		0.29	1	B1
				<b>Total 1 mark</b>

Q	Working	Answer	Mark	Notes
2		-9, -7, -3, 8, 16	1	B1
				<b>Total 1 mark</b>

Q	Working	Answer	Mark	Notes
3		0.85	1	B1
				<b>Total 1 mark</b>

Q	Working	Answer	Mark	Notes
4		30	1	B1
				<b>Total 1 mark</b>

Q	Working	Answer	Mark	Notes
5		$24b$	1	B1 cao
				<b>Total 1 mark</b>

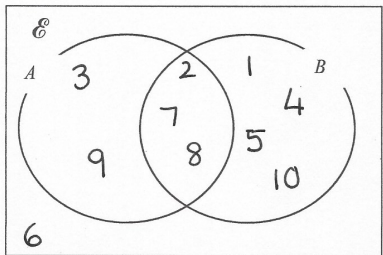
Q	Working	Answer	Mark	Notes
6 (a)		Germany	1	B1 allow G
(b)		bar at correct height	1	B1 any width is acceptable
(c)		11	1	B1
				<b>Total 3 marks</b>

Q	Working	Answer	Mark	Notes
7		<i>BO, BA, BW, FO, FA, FW, CO, CA, CW</i>	2	B2 B2 all correct combinations with no repeats (B1 for at least 4 correct combinations ignoring repeats)
				<b>Total 2 marks</b>

Q	Working	Answer	Mark	Notes
8 (a)	$3 \times 12 (= 36)$ and $5 \times 4 (= 20)$		2	M1
		16		A1 SC B1 for an answer of 56 or -16
(b)	$4p = 24 - 9$ or $4p = 15$ or $p + \frac{9}{4} = \frac{24}{4}$ oe or $(24 - 9) \div 4$ or $15 \div 4$		2	M1 for a correct first step <b>or</b> for a calculation for $p$
		$\frac{15}{4}$		A1 oe e.g. 3.75 or $3\frac{3}{4}$
				<b>Total 4 marks</b>

<b>Q</b>	<b>Working</b>	<b>Answer</b>	<b>Mark</b>	<b>Notes</b>
<b>9</b> (a)		6 or 8	1	B1 allow 6 and 8
(b)		27	1	B1 cao
(c)		25	1	B1 cao
(d)		3 or 7 or 11	1	B1 allow two or more of 3, 7, 11
				<b>Total 4 marks</b>

Q	Working	Answer	Mark	Notes
10 (i)		$\frac{7}{20}$	1	B1 oe
(ii)	$\frac{2+6}{20}$ oe or $1 - \frac{5+7}{20}$ oe		2	M1 ft their (i)
		$\frac{8}{20}$		A1 oe penalise incorrect notation only once
				<b>Total 3 marks</b>

Q	Working	Answer	Mark	Notes
11			3	B3 For all 4 parts of Venn diagram correct (B2 for 2 or 3 parts correct, B1 for 1 part correct)
				<b>Total 3 marks</b>

Q	Working	Answer	Mark	Notes
12 (a)(i)		37	1	B1
(ii)		+6	1	B1 oe eg 'added 6' or 'plus 6'
(b)		169	1	B1
(c)		All the numbers in the sequence are odd numbers	1	B1 or the sequence is $6n + 1$ or it goes ....91, 97, ... oe
				<b>Total 4 marks</b>

Q	Working	Answer	Mark	Notes
<b>13</b> (a)		27	1	B1 cao
(b)		$x^2 + 5x$	1	B1
				<b>Total 2 marks</b>

Q	Working	Answer	Mark	Notes
<b>14</b>	$1 - \frac{3}{10} (= \frac{7}{10})$ or $\frac{3}{10} \times 400 (= 120)$		2	M1
		280		A1
				<b>Total 2 marks</b>

Q	Working	Answer	Mark	Notes
<b>15</b> (a)		$8a$	1	B1 cao
(b)		$7g - 2e$	2	B2 or $-2e + 7g$ If not B2 then award B1 for $7g$ or $-2e$
				<b>Total 3 marks</b>

Q	Working	Answer	Mark	Notes																								
16 (a)	<table border="1"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>4</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>6</td> <td>7</td> <td>8</td> <td>9</td> </tr> <tr> <td>8</td> <td>9</td> <td>10</td> <td>11</td> </tr> <tr> <td>10</td> <td>11</td> <td>12</td> <td>13</td> </tr> </table>		1	2	3	2	3	4	5	4	5	6	7	6	7	8	9	8	9	10	11	10	11	12	13		2	B2 For all 10 entries correct in table (B1 for 6, 7, 8 or 9 correct entries)
	1	2	3																									
2	3	4	5																									
4	5	6	7																									
6	7	8	9																									
8	9	10	11																									
10	11	12	13																									
(b)(i)		$\frac{10}{15}$	1	B1ft oe eg $\frac{2}{3}$																								
(ii)		$\frac{8}{15}$	1	B1ft penalise incorrect notation once only in part (b)																								
				<b>Total 4 marks</b>																								

Q	Working	Answer	Mark	Notes
17 (a)(i)		C	1	B1 cao
(ii)		A	1	B1 cao
(b)		Correct reason	1	B1 e.g. for probability cannot be more than 1 oe It adds to 1 oe Scale goes to 1 oe It has to be below 1 oe
				<b>Total 3 marks</b>

Q	Working	Answer	Mark	Notes
18		0.009, 0.04, 0.044, 0.104, 0.2	1	B1
				<b>Total 1 mark</b>

Q	Working	Answer	Mark	Notes
19 (a)		$8.9 \times 10^{-5}$	1	B1
(b)		83 400	1	B1
				<b>Total 2 marks</b>

Q	Working	Answer	Mark	Notes
20	$(2^2 + 5) \times (2 + 3^2) = 99$	Two correct pairs of brackets	1	B1 cao
				<b>Total 1 mark</b>

Q	Working	Answer	Mark	Notes																
21	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td>x</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>y</td> <td>5</td> <td>3</td> <td>1</td> <td>-1</td> <td>-3</td> <td>-5</td> <td>-7</td> </tr> </table> <p>(-1, 5) (0, 3) (1, 1) (2, -1) (3, -3) (4, -5) (5, -7)</p>	x	-1	0	1	2	3	4	5	y	5	3	1	-1	-3	-5	-7	Correct line between $x = -1$ and $x = 5$	3	<p>B3 for a correct line between <math>x = -1</math> and <math>x = 5</math></p> <p>(B2 for a correct straight line segment through at least 3 of (-1, 5) (0, 3) (1, 1) (2, -1) (3, -3) (4, -5) (5, -7)</p> <p><b>or</b></p> <p>for all of (-1, 5) (0, 3) (1, 1) (2, -1) (3, -3) (4, -5) (5, -7) 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, 3) <b>or</b> for a line with a gradient of -2)</p>
x	-1	0	1	2	3	4	5													
y	5	3	1	-1	-3	-5	-7													
				<b>Total 3 marks</b>																

Q	Working		Answer	Mark	Notes
22				3	M1 for $d = 9$ or $(c + d) \div 2 = 8$ or $d - a = 4$
			M1 for two of the above		
		$a = 5, b = 6,$ $c = 7, d = 9$	A1 All correct		
					<b>Total 3 marks</b>

Q	Working		Answer	Mark	Notes
23	eg $2 \times 2 + 2 \times 4 (= 12)$ oe			3	M1 for a correct calculation to find the area of the kite or the correct area of the kite stated
			M1 for any rectangle		
			A1 for a rectangle of area $12 \text{ cm}^2$		
					<b>Total 3 marks</b>

Q	Working		Answer	Mark	Notes
24		$3(3y - 4)$	1	B1	
					<b>Total 1 mark</b>

Q	Working		Answer	Mark	Notes
25		$T = 15m + 40p$	3	B3	((B2 for $15m + 40p$ or $T = 15m + xp$ or $T = ym + 40p$ or $T = 40m + 15p$ ) (B1 for $15m + xp$ or $ym + 40p$ or $40m + 15n$ or for $T =$ an incorrect expression in $m$ and $p$ ))
					<b>Total 3 marks</b>



Q	Working	Answer	Mark	Notes
26	Allow Triangle drawn with intersecting arcs 6 cm from <i>B</i> and 9 cm from <i>A</i>	Triangle drawn with correct intersecting arcs 6 cm from <i>A</i> and 9 cm from <i>B</i>		B2 for triangle drawn with correct intersecting arcs 6 cm from <i>A</i> and 9 cm from <i>B</i> within the overlay (B1 for two intersecting arcs within the overlay <b>or</b> accurate triangle drawn with no arcs)
				<b>Total 2 marks</b>

Q	Working	Answer	Mark	Notes
27	$\frac{16}{3} - \frac{20}{7}$ or $(5)\frac{7}{21} - (2)\frac{18}{21}$ or $(5)\frac{7a}{21a} - (2)\frac{18a}{21a}$		3	M1 for correct improper fractions or fractional part of numbers written correctly over a common denominator
	$\frac{112}{21} - \frac{60}{21}$ or $\frac{112a}{21a} - \frac{60a}{21a}$ or $5\frac{7}{21} - 2\frac{18}{21} = 3 - \frac{11}{21}$ oe			M1 for correct fractions with a common denominator or a multiple of 21
	$\frac{112}{21} - \frac{60}{21} = \frac{52}{21} = 2\frac{10}{21}$ oe or $3 - \frac{11}{21} = 2\frac{10}{21}$	Shown		A1 Dep on M2 for a correct answer from fully correct working
				<b>Total 3 marks</b>

Q		Working	Answer	Mark	Notes
28	(a)		rotation  180° about (0, 0)	2	B1 oe with no mention of reflection, translation, enlargement, move, flip etc B1 oe with no mention of a line, column vector or SF (SCB1 for 'half turn about <i>O</i> ' with no contradictory statements) <b>Alternative:</b> B2 for enlargement with centre <i>O</i> and SF -1 (B1 for enlargement with no mention of other transformation, B1 for centre <i>O</i> and SF -1)
	(b)	(-4, 1)(-6, 1)(-6, 3)(-5, 3)(-5, 4)(-4, 4)	A correct shape	2	B2 (B1 for a 'correct' shape reflected in any vertical line or a correct reflection in the line $x = -1$ )
					<b>Total 4 marks</b>

Q	Working	Answer	Mark	Notes
29 (a)	$n^2 - 6n + 4n - 24$		2	M1 for any 3 correct terms <b>or</b> for 4 out of 4 correct terms ignoring signs <b>or</b> for $n^2 - 2n \dots$ <b>or</b> for $\dots - 2n - 24$
		$n^2 - 2n - 24$		A1 oe
(b)	$8x - 12$ <b>or</b> $\frac{3}{4}x - \frac{5}{4}$ oe or $0.75x - 1.25$ oe		3	M1 for correct multiplication by 4 <b>or</b> separate fractions on the RHS
	$8x - 3x = -5 + 12$ oe or $5x = 7$ oe <b>or</b> $2x - \frac{3}{4}x = -\frac{5}{4} + 3$ or $2x - 0.75x = -1.25 + 3$ oe			M1 ft (dep on 4 terms) for terms in $x$ on one side of equation and number terms on the other
		$\frac{7}{5}$		A1 oe dep on M1 1.4 or $1\frac{2}{5}$ oe
				<b>Total 5 marks</b>

Q	Working	Answer	Mark	Notes
30 (a)		8	1	B1
(b)		11	1	B1 accept $x^{11}$
(c)		$8k^6m^{12}$	2	B2 for all correct B1 for two correct from 8 or $k^6$ or $m^{12}$
				<b>Total 4 marks</b>

Q		Working	Answer	Mark	Notes
31	(i)	$(x \pm 3)(x \pm 8)$		2	M1 Or $(x + a)(x + b)$ where $ab = -24$ or $a + b = 5$
					A1
	(ii)		$(x - 3)(x + 8)$	1	B1ft ft from their incorrect factors if M1 scored in (i)
					<b>Total 3 marks</b>

Qn	Max score	Mean %	Average score of candidates achieving grade:						
			ALL	5	4	3	2	1	U
1	1	95	0.95	1.00	0.99	0.98	0.95	0.79	0.38
2	1	95	0.95	0.99	0.99	0.98	0.92	0.77	0.48
3	1	87	0.87	0.98	0.95	0.89	0.78	0.59	0.27
4	1	84	0.84	0.97	0.94	0.87	0.70	0.51	0.25
5	1	90	0.90	0.97	0.93	0.91	0.85	0.77	0.58
<b>6</b>	<b>3</b>	<b>95</b>	<b>2.84</b>	<b>2.97</b>	<b>2.94</b>	<b>2.90</b>	<b>2.82</b>	<b>2.45</b>	<b>1.53</b>
<b>7</b>	<b>2</b>	<b>82</b>	<b>1.64</b>	<b>1.96</b>	<b>1.87</b>	<b>1.71</b>	<b>1.31</b>	<b>0.72</b>	<b>0.16</b>
8	4	77	3.06	3.92	3.74	3.13	2.05	0.90	0.27
9	4	84	3.35	3.81	3.60	3.36	2.95	2.32	1.72
<b>10</b>	<b>3</b>	<b>74</b>	<b>2.22</b>	<b>2.88</b>	<b>2.67</b>	<b>2.31</b>	<b>1.49</b>	<b>0.63</b>	<b>0.18</b>
<b>11</b>	<b>3</b>	<b>77</b>	<b>2.30</b>	<b>2.78</b>	<b>2.62</b>	<b>2.37</b>	<b>1.86</b>	<b>1.00</b>	<b>0.18</b>
<b>12</b>	<b>4</b>	<b>83</b>	<b>3.31</b>	<b>3.68</b>	<b>3.49</b>	<b>3.37</b>	<b>3.09</b>	<b>2.38</b>	<b>1.16</b>
13	2	71	1.42	1.90	1.71	1.39	0.96	0.44	0.12
14	2	71	1.42	1.89	1.70	1.39	0.91	0.46	0.14
15	3	74	2.23	2.78	2.53	2.14	1.72	1.29	0.71
<b>16</b>	<b>4</b>	<b>69</b>	<b>2.74</b>	<b>3.67</b>	<b>3.25</b>	<b>2.63</b>	<b>1.76</b>	<b>1.03</b>	<b>0.48</b>
<b>17</b>	<b>3</b>	<b>70</b>	<b>2.11</b>	<b>2.64</b>	<b>2.34</b>	<b>2.07</b>	<b>1.74</b>	<b>1.25</b>	<b>0.60</b>
18	1	61	0.61	0.86	0.73	0.55	0.41	0.18	0.07
<b>19</b>	<b>2</b>	<b>62</b>	<b>1.23</b>	<b>1.66</b>	<b>1.40</b>	<b>1.14</b>	<b>0.90</b>	<b>0.57</b>	<b>0.17</b>
20	1	62	0.62	0.80	0.69	0.61	0.48	0.33	0.15
<b>21</b>	<b>3</b>	<b>51</b>	<b>1.54</b>	<b>2.63</b>	<b>1.96</b>	<b>1.20</b>	<b>0.58</b>	<b>0.17</b>	<b>0.04</b>
<b>22</b>	<b>3</b>	<b>47</b>	<b>1.41</b>	<b>2.44</b>	<b>1.75</b>	<b>1.09</b>	<b>0.51</b>	<b>0.16</b>	<b>0.06</b>
<b>23</b>	<b>3</b>	<b>52</b>	<b>1.57</b>	<b>2.33</b>	<b>1.72</b>	<b>1.36</b>	<b>1.03</b>	<b>0.74</b>	<b>0.28</b>
24	1	44	0.44	0.81	0.57	0.28	0.12	0.03	0.00
25	3	46	1.37	2.40	1.71	1.02	0.51	0.14	0.02
<b>26</b>	<b>2</b>	<b>39</b>	<b>0.77</b>	<b>1.32</b>	<b>0.93</b>	<b>0.61</b>	<b>0.32</b>	<b>0.13</b>	<b>0.04</b>
<b>27</b>	<b>3</b>	<b>38</b>	<b>1.15</b>	<b>2.31</b>	<b>1.34</b>	<b>0.73</b>	<b>0.33</b>	<b>0.12</b>	<b>0.04</b>
<b>28</b>	<b>4</b>	<b>35</b>	<b>1.41</b>	<b>2.63</b>	<b>1.67</b>	<b>0.94</b>	<b>0.52</b>	<b>0.21</b>	<b>0.01</b>
<b>29</b>	<b>5</b>	<b>25</b>	<b>1.25</b>	<b>2.74</b>	<b>1.41</b>	<b>0.72</b>	<b>0.32</b>	<b>0.09</b>	<b>0.03</b>
<b>30</b>	<b>4</b>	<b>24</b>	<b>0.95</b>	<b>1.88</b>	<b>1.07</b>	<b>0.60</b>	<b>0.35</b>	<b>0.20</b>	<b>0.07</b>
<b>31</b>	<b>3</b>	<b>20</b>	<b>0.60</b>	<b>1.54</b>	<b>0.62</b>	<b>0.23</b>	<b>0.06</b>	<b>0.04</b>	<b>0.01</b>
	<b>80</b>	<b>60</b>	<b>48.07</b>	<b>71.14</b>	<b>58.83</b>	<b>47.48</b>	<b>35.30</b>	<b>22.41</b>	<b>10.20</b>

**Suggested grade boundaries**

<b>Grade</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
Mark	65	53	41	29	16