

Practice Tests Set 7 – Paper 2F mark scheme – Spring 2018

Qn		Working	Answer	Mark	Notes
1			$\frac{3}{8}$	1	B1 cao (or equivalent fraction)
2			550	1	B1 cao
3			$\frac{9}{30}$	1	B1 cao
4			even cube	1	B1 cao, e.g. 8, 64, 216, 512, 1000, etc
5			145	2	M1 for $319 \div 2.2$ A1 cao
6			$\frac{1}{7}$	1	B1 cao
7			18	2	M1 for 7.2 – 7.4 (cm) or “measurement” $\times 2.5$ A1 for 17.5 – 18.5
8			No with reason	3	M1 for 17, 20 .or $+ 3$ or $3n + 2$ M1 for method to show that 34 is not in the sequence eg continue sequence to at least 32 eg attempt to solve $3n + 2 = 34$ C1 (dep on M2) for statement with conclusion eg No with 32, 35 shown eg $n = 32 \div 3$ which is not a whole number

Qn		Working	Answer	Mark	Notes
9			65.25	3	M1 method for number of packs needed $120 \div 8 (= 15)$ M1 method for total cost “15” $\times 4.35$ A1 cao
10			AB, AO, AP BO, BP, OP	2	M1 at least 3 correct combinations A1 fully correct with no extras or permutations
11			125	3	P1 for process to find $7/20$ of 500 ( $=175$ ) or $7/20 + 4/10 (=3/4)$ P1 for process to find 40% of 500 ( $=200$ ) or $\frac{1}{4} \times 500$ A1 cao
12			Explanation	2	M1 for using angles on a straight line add up to $180^\circ$ or $146 + 32 (= 178)$ C1 explanation with $178 \neq 180$ and reason <u>angles</u> on a straight <u>line</u> add up to <u>180</u>
13			161.50	5	M2 for a correct method to decrease 6720 by 20%, eg $6720 \times 0.8$ ( $= 5376$ ) or $6720 \times 0.2 (= 1344$ and $6720 - 1344(= 5376)$ ) (M1 for a correct method to find 20% of 6720 eg $6720 \times 0.2$ or $\frac{20}{100} \times 6720 (= 1344)$ ) M1 for subtracting 1500 ( $= 3876$ ) after a percentage calculation M1 “3876” $\div 24$ after the subtraction of 1500 A1 for 161.5(0)

Qn		Working	Answer	Mark	Notes
14			80	3	<p>M1 for intention to find missing side length <math>10 - 4 (= 6)</math>  or perimeter of 4 rectangles eg <math>4 \times (10 + 4 + 10 + 4) (=112)</math>  M1 for complete method to find perimeter  eg <math>4 \times (10 + 4 + '6')</math> or <math>'112' - 8 \times 4</math>  A1 cao</p>
15			20	3	<p>M1 for <math>330 \div 120 (=2.75)</math> or <math>200 \div 60 (=3 \frac{1}{3})</math> or <math>450 \div 180 (=2.5)</math>  M1 for <math>450 \div 180 (=2.5)</math> AND <math>8 \times '2.5' (=20)</math>  A1 cao  <b>OR</b>  M1 for <math>120 \div 8 (=15)</math> or <math>60 \div 8 (=7.5)</math> or <math>180 \div 8 (=22.5)</math>  M1 for <math>330 \div (120 \div 8) (=22)</math> or <math>200 \div (60 \div 8) (=26.6...)</math> or <math>450 \div (180 \div 8) (=20)</math>  A1 cao  <b>OR</b>  M1 for multiples of 120:60:180, e.g. 240:120:360  M1 for multiples linked to 450 and <math>8+8+4</math> or scaling 2.5 oe  A1 cao</p>

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<b>16</b>	(a)	Reason	1	C1 reason for low attendance in hot weather, e.g. rain, school day, measurement error
	(b)	Positive	1	B1 positive (correlation)
	(c)	15-25	1	B1 answer in range 15-25
	(d)	Data out of range	1	C1 explanation, e.g. extrapolation, data out of range, number of children will be negative
<b>17</b>	(a)	Correct table	2	M1 2 or 3 entries correct A1 all 4 table entries correct
	(b)	Graph	2	M1 (dep on M1) for 6 or 7 points plotted from table A1 correct graph drawn
<b>18</b>	(a)	$\frac{3}{7}, \frac{4}{7}, \frac{3}{8}, \frac{5}{8}, \frac{3}{8}, \frac{5}{8}$	4	M1 for $\frac{3}{7}, \frac{4}{7}$ A1 correct tree diagram
	(b)	$\frac{15}{56}$		M1 for $\frac{3}{7} \times \frac{5}{8}$ A1 cao

Qn		Working	Answer	Mark	Notes
19			Rotation 90° anti-clockwise centre (0, -1)	2	M1 for 2 of: Rotation, 90° anti-clockwise (or 270° clockwise) (centre) (0, -1) A1 correct transformation No marks to be awarded if more than one transformation is given.
20		$2x, x + 3, x + 2x + x + 3$	$4x + 3$	2	M1 $2x$ or $x+3$ A1 $x + 2x + x + 3$ (oe)
21			$x = 3, y = -2$	3	M1 correct process to eliminate one variable (condone one arithmetic error) M1 (dep) for substituting found value in one of the equations or appropriate method after starting again. A1 cao
22			$\frac{1}{7}$	3	P1 for process to start solving the problem, e.g. 25, 75, 75 or $25 + 75 + 75 (= 175)$ or $\frac{1}{4} + \frac{3}{4} + \frac{3}{4} \left( = 1\frac{3}{4} \right)$ or ratio e.g. 3 : 3 : 1 P1 for complete process $25 \div 175$ or $\frac{1}{4} \div 1\frac{3}{4}$ A1 $\frac{1}{7}$ oe

Qn	Working	Answer	Mark	Notes
23		$13 \text{ m}^2$	5	<p>P1 process to find <math>FE</math> <math>(28 - 6 - 6) \div 2 (= 8)</math>  or <math>AB</math> <math>(28 - 6 - 6 - 3 - 3) \div 2 (= 5)</math>  P1 process to find area of a triangle  <math>\frac{4 \times 8}{2} (= 16)</math> or <math>\frac{6 \times 3}{2} (= 9)</math> or <math>\frac{5 \times 4}{2} (= 10)</math> or <math>\frac{2 \times 3}{2} (= 3)</math>  P1 complete process for shaded area  e.g. <math>8 \times 4 + 2 \times 3 - ("16" + "9")</math>  or <math>\frac{5 \times 4}{2} + \frac{2 \times 3}{2}</math>  A1 cao  C1 (indep) for <math>\text{m}^2</math></p>
24		210	4	<p>P1 process for total girls in Year 7 <math>\frac{177}{360} \times 240 (= 118)</math>  P1 process for total students in Year 8 <math>240 + 8 - 32 (= 216)</math>  or number of girls in Year 8 (126)  P1 complete method for angle for Year 8 girls <math>\frac{"118"+8}{\text{"216"}} \times 360</math>  A1 cao</p>

Qn		Working	Answer	Mark	Notes
25			$0.755 \leq y < 0.765$	2	B1 for 0.755 or 0.765 B1 for $0.755 \leq y < 0.765$
26		$3 \times (-2)^2 - (5 \times -2)$ <b>or</b> $3(-2)^2 - 5(-2)$ <b>or</b> $3 \times (-2)^2 - 5 \times -2$ <b>or</b> $3 \times 4 - 5 \times -2$	22	2	M1 <b>or</b> $12 - -10$ <b>or</b> $12 + 10$ <b>or</b> $12 \text{ and } -10$ A1 cao
27	(a)	$2.1 \div (1 + 2 + 3)$ (= 0.35) <b>or</b> $2.1 \div 6$ $2.1 \div (1 + 2 + 3) \times 2$ <b>or</b> $2.1 \div 6 \times 2$	0.7	2	M1 allow $2.1 \div (1 + 2 + 3) \times 3$ (=1.05) for the method mark A1 (accept 0.70)
	(b)	$6 \div 3 = 2$ <b>and</b> $2 \times 0.75$ <b>or</b> $\frac{0.75}{3} \times 6$ oe	1.5	2	M1 for a complete method A1 cao
28			11	4	M1 for $3x + 2 = 87 - 2x$ M1 for $5x + 32$ M1 for $5x = 55$ A1 cao
29			371.42	2	M1 $350 \times 1.02^3$ oe A1 371.42
30			13	3	M1 for $6z - 15 = 4z + 11$ M1 for $22 - 15 = 11$ A1 cao

### **Suggested grade boundaries**

	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Paper 1F</b>	<b>66</b>	<b>52</b>	<b>38</b>	<b>24</b>	<b>10</b>
<b>Paper 2F</b>	<b>49</b>	<b>39</b>	<b>29</b>	<b>19</b>	<b>10</b>
<b>Paper 3F</b>	<b>45</b>	<b>36</b>	<b>27</b>	<b>18</b>	<b>10</b>
<b>Total</b>	<b>160</b>	<b>127</b>	<b>94</b>	<b>61</b>	<b>30</b>