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 ÷ 2.2 A1 cao
6			$\frac{1}{7}$	1	B1 cao
7			18	2	M1 for 7.2 – 7.4 (cm) or "measurement" × 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 ÷ 3 which is not a whole number

Qn		Working	Answer	Mark	Notes
9			65.25	3	M1 method for number of packs needed 120 ÷ 8 (= 15) M1 method for total cost "15" × 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 ¼ × 500 A1 cao
12			Explanation	2	M1 for using angles on a straight line add up to 180° or 146 +32 (= 178) C1 explanation with 178 ≠ 180 and reason angles on a straight line add up to 180
13			161.50	5	M2 for a correct method to decrease 6720 by 20%, eg 6720 × 0.8 (= 5376) or 6720 × 0.2 (= 1344 and 6720 – 1344(= 5376)) (M1 for a correct method to find 20% of 6720 eg 6720 × 0.2 or $\frac{20}{100} \times 6720$ (= 1344)) M1 for subtracting 1500 (= 3876) after a percentage calculation M1 "3876" ÷ 24 after the subtraction of 1500 A1 for 161.5(0)

Qn		Working	Answer	Mark	Notes
14			80	3	M1 for intention to find missing side length 10 – 4 (= 6) or perimeter of 4 rectangles eg 4 × (10 + 4 + 10 + 4) (=112) M1 for complete method to find perimeter eg 4 × (10 + 4 + '6') or '112' – 8 × 4 A1 cao
15			20	3	M1 for 330÷120 (=2.75) or 200÷60 (=3 $^{1}/_{3}$) or 450 ÷180 (=2.5) M1 for 450÷180 (=2.5) AND 8×"2.5"(=20) A1 cao **OR** M1 for 120 ÷ 8 (=15) or 60 ÷ 8 (=7.5) or 180 ÷ 8 (=22.5) M1 for 330 ÷ (120 ÷ 8) (=22) or 200 ÷ (60 ÷ 8) (=26.6...) or 450 ÷ (180 ÷ 8) (=20) A1 cao **OR** M1 for multiples of 120:60:180, e.g. 240:120:360 M1 for multiples linked to 450 and 8+8+4 or scaling 2.5 oe A1 cao

Qn		Working	Answer	Mark	Notes
16	(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
17	(a)	<table><tr><td>x</td><td>0.5</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>y</td><td>**6**</td><td>3</td><td>1.5</td><td>**1**</td><td>0.75</td><td>**0.6**</td><td>**0.5**</td></tr></table>	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
18	(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 ÷ 175 or $\frac{1}{4}\div 1\frac{3}{4}$

Qn		Working	Answer	Mark	Notes
					A1 $\frac{1}{7}$ oe
23			13 m^2	5	P1 process to find *FE* (28 – 6 – 6) ÷ 2 (= 8) or *AB* (28 – 6 – 6 – 3 – 3) ÷ 2 (= 5) P1 process to find area of a triangle $\frac{4\times8}{2}$ (= 16) or $\frac{6\times3}{2}$ (= 9) or $\frac{5\times4}{2}$ (= 10) or $\frac{2\times3}{2}$ (= 3) P1 complete process for shaded area e.g. 8 × 4 + 2 × 3 – ("16" + "9") or $\frac{5\times4}{2}+\frac{2\times3}{2}$ A1 cao C1 (indep) for m^2
24			210	4	P1 process for total girls in Year 7 $\frac{177}{360}\times 240$ (= 118) P1 process for total students in Year 8 240 + 8 − 32 (= 216) or number of girls in Year 8 (126) P1 complete method for angle for Year 8 girls $\frac{"118"+8}{"216"}\times 360$ A1 cao

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		$3 \times (-2)^2 - (5 \times -2)$ **or** $3(-2)^2 - 5(-2)$ **or** $3 \times (-2)^2 - 5 \times -2$ **or** $3 \times 4 - 5 \times -2$	22	2	M1 **or** 12 – – 10 **or** 12 + 10 **or** 12 and –10 A1 cao
27	(a)	$2.1 \div (1 + 2 + 3)$ (= 0.35) **or** $2.1 \div 6$ $2.1 \div (1 + 2 + 3) \times 2$ **or** $2.1 \div 6 \times 2$	0.7	2	M1 allow $2.1 \div (1 + 2 + 3) \times 3$ (=1.05) for the method mark A1 (accept 0.70)
	(b)	$6 \div 3 = 2$ **and** 2×0.75 **or** $\frac{0.75}{3} \times 6$ 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 350×1.02^3 oe A1 371.42
30			13	3	M1 for $6z - 15 = 4z + 11$ M1 for $22 - 15 = 11$

Qn		Working	Answer	Mark	Notes
					A1 cao

Suggested grade boundaries

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