Practice Tests Set 7 – Paper 3F mark scheme – Spring 2018

Qn		Working	Answer	Mark	Notes
1			65	1	B1 cao
2			36	1	B1 cao
3			$\dfrac{1}{6}$	1	B1 for cross placed close to $\dfrac{1}{6}$
4			0.3	1	B1 cao
5	(a)		9,11	2	B2 cao
	(b)		31	1	B1 cao
	(c)		Method	1	B1, eg. double and add 1
	(d)	All patterns have odd number of sticks	No, with reason	1	C1 for no, with reason
6	(a)		Thursday	1	B1 cao
	(b)		Correct chart	2	B2
7	(a)		Reason	1	B1, e.g. all numbers in sequence are even
	(b)		$4n + 2$	2	M1 for $4n$
					A1 cao
8	(a)		Correct diagram	2	B1 all correct
					B1 for at least 6 correct
	(b)		$\dfrac{2}{7}$	2	M1 for 7 seen
					A1 cao

Qn		Working	Answer	Mark	Notes
9	(a)	$12x + 6 - 6x - 2$	$6x + 4$	1	A1 cao
	(b)		a^{20}	1	A1 cao
10			25	3	M1 for (opposite angle =) 50 May be marked on the diagram
					M1 for complete method e.g. $90 - (180 - \text{"50"}) \div 2$ or $50 \div 2$
					A1 cao
					or
					M1 for $180 - 50 (= 130)$ May be marked on the diagram
					M1 for complete method eg $(180 - \text{"130"}) \div 2$
					A1 cao
11	(a)		0.47	1	B1 cao
	(b)		2.28×10^9	2	M1 for 22.8 and 10^8 seen
					A1 cao
12		$60 \div 5 = 12$	108	3	M1 for finding that one part = 12 students
		$12 \times 4 = 48$			M1 for boys = 48
		$60 + 48 = 108$			A1 cao

Qn		Working	Answer	Mark	Notes
13	(a)	$24 \times \dfrac{5}{3}$	40	2	M1 or $24 \div 3 \ (=8)$
					A1 cao
	(b)	$\dfrac{45}{5} \times 4$ oe	36	2	M1 or $45 \div (4 + 1) \ (=9)$
					A1 cao
14			$y = 2x + 1$ drawn	3	M1 at least 2 correct attempts to find points by substituting or line drawn with gradient of 2 or line drawn with y intercept at 1
					M1 at least 2 correct points plotted or line segment of $y = 2x + 1$ drawn
					A1 correct line between $x = -2$ and $x = 3$
15			explanation	2	M1 identifies two different prime numbers
					C1 explanation e.g. counter example $2 + 7 = 9$
16			No, with comparison of correct values	3	P1 starts process of comparison, e.g. writes two appropriate fractions or finds a percentage or works out a multiplier
					P1 complete process to give values that can be used for comparison
					A1 No and comparison of correct comparable values (e.g. 80% and 76.7...% **OR** 44.8 (people)
					(accept Yes with a suitable argument)
17			46	2	M1 links 5% with 2.30 or $100 \div 5 \ (= 20)$
					A1 cao

Qn		Working	Answer	Mark	Notes
18	(a)		34.93	5	P1 process to find area of circle or semicircle $\pi \times 4.2^2 (\div 2)$
					P1 process to find area of garden (= 74.7...)
					P1 process to find number of boxes "74.7" ÷ 12
					P1 process to find cost "7" × 4.99
					A1 cao
	(b)		Correct statement	1	C1 e.g. She might need to buy fewer boxes
19			36	3	P1 a correct process to find either an interior or an exterior angle, e.g. (180 × 3) ÷ 5 (= 108) or 360 ÷ 5 (= 72)
					P1 (dep) a complete process to find angle *CFD*
					A1 cao
20			36.4	4	P1 a strategy to start to solve the problem e.g. 105 ÷ (5 – 2) (= 35)
					P1 process to find Laura's share e.g. 385 – 2 × "35" – 5 × "35" (= 140) or 385 ÷ "35" – 2 – 5 (= 4)
					P1 process to find the percentage Laura gets e.g. "140"÷ 385 × 100 oe or "4" ÷ 11 × 100 oe
					A1 answer in range 36.3 to 36.4, accept 36%

Qn	Working	Answer	Mark	Notes
21		mistakes identified	2	C1 points joined with curve, not line segments
				C1 points not plotted at mid-points
22 (a)	8.5×5	42.5	1	B1 cao
(b)		110°	1	B1 cao
(c)		Correct ×	2	M1 bearing of 40° or at distance 4 cm
				A1 correctly marked ×
23 (a)		Salt: 60 grams Sugar: 90 grams	3	M1 Salt: $\dfrac{2}{5} \times 150$ OR Sugar: $\dfrac{3}{5} \times 150$
				A1 cao
				A1 cao
(b)		1.71 : 1	2	M1 "90"+30 : "60"+10 OR Sugar = "90"+30 and Salt = ""60"+10 B1 ft
				M1 120: 70 OR 12 : 7 OR 4 : 2.33
				B1 cao
24 (i)		$2^2 \times 5$	3	B1 for $2^2 \times 5$ oe or 20
(ii)		$2^3 \times 3 \times 5^2$		B2 for $2^3 \times 3 \times 5^2$ oe or 600
				(B1 for any product using powers of 2 and 3 and 5 **or** at least 300, 600…
				and 40, 80, 120 …)

Qn		Working	Answer	Mark	Notes
25	(a)		2	1	B1 cao
	(b)		negative (correlation)	1	B1 cao
	(c)		(1.5, 8) plotted line of best fit through (1.5, 8)	2	B1 (1.5, 8) plotted B1 line of best fit through (1.5, 8)
	(d)		2.6 – 2.9	1	A1 for answer in range 2.6 – 2.9
26			Vertices at (3, 2) (3, 4) (4, 4) (4, 3)	2	B2 B1 for shape of correct size and orientation **OR** a correct enlargement scale factor $\frac{1}{2}$, centre (1, 3)
27			30	2	M1 use of appropriate formula, e.g. $\sin x = \dfrac{1.6}{3.2} = 0.5$ 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