

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			$\frac{1}{6}$	1	B1 for cross placed close to $\frac{1}{6}$
4			0.3	1	B1 cao
5	(a) (b) (c) (d)	All patterns have odd number of sticks	9,11	2	B2 cao
			31	1	B1 cao
			Method	1	B1, eg. double and add 1
			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)		$\frac{2}{7}$	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. $90 - (180 - "50") \div 2$ or $50 \div 2$ A1 cao <b>or</b> M1 for $180 - 50 (= 130)$ May be marked on the diagram M1 for complete method eg $(180 - "130") \div 2$ A1 cao
11	(a)		0.47	1	B1 cao
	(b)		$2.28 \times 10^9$	2	M1 for 22.8 and $10^8$ seen A1 cao
12		$60 \div 5 = 12$ $12 \times 4 = 48$ $60 + 48 = 108$	108	3	M1 for finding that one part = 12 students M1 for boys = 48 A1 cao

Qn		Working	Answer	Mark	Notes
13	(a)	$24 \times \frac{5}{3}$	40	2	M1 or $24 \div 3 (=8)$ A1 cao
	(b)	$\frac{45}{5} \times 4$ 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...% <b>OR</b> 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” $\div 12$ P1 process to find cost “7” $\times 4.99$ 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. $(180 \times 3) \div 5 (= 108)$ or $360 \div 5 (= 72)$ P1 (dep) a complete process to find angle <i>CFD</i> A1 cao
20			36.4	4	P1 a strategy to start to solve the problem e.g. $105 \div (5 - 2) (= 35)$ P1 process to find Laura’s share e.g. $385 - 2 \times “35” - 5 \times “35” (= 140)$ or $385 \div “35” - 2 - 5 (= 4)$ P1 process to find the percentage Laura gets e.g. “140” $\div 385 \times 100$ oe or “4” $\div 11 \times 100$ 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)	$8.5 \times 5$	42.5	1	B1 cao
	(b)		$110^\circ$	1	B1 cao
	(c)		Correct $\times$	2	M1 bearing of $40^\circ$ or at distance 4 cm A1 correctly marked $\times$
23	(a)		Salt: 60 grams Sugar: 90 grams	3	M1 Salt: $\frac{2}{5} \times 150$ OR Sugar: $\frac{3}{5} \times 150$ 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 <b>or</b> at least 300, 600... <b>and</b> 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 <b>OR</b> a correct enlargement scale factor $\frac{1}{2}$ , centre (1, 3)
27		30	2	M1 use of appropriate formula, e.g. $\sin x = \frac{1.6}{3.2} = 0.5$  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