

Question	Working	Answer	Mark	Notes
1(a)	LC M of 10, 18 and 12 = 180	180	3	M1 for attempting to find a multiple of 10, 18 and 12 M1 for LCM A1 cao
1 (b)	$(210/10 + 450/18 + 1320/12) \times 180$ $= (21 + 25 + 110) \times 180 = 280.80$ 280.80×0.9	252.72	3	M1 for $(210/10 + 450/18 + 1320/12) \times 180$ M1 for '280.80' x 0.9 A1 cao
2(a)(i) (ii) (iii)		8 cm 45° 4 cm	3	B1 cao B1 cao B1 cao
2(b)	$\frac{1}{2} (16 + 24) \times 8$	160	2	M1 for $\frac{1}{2} (16 + 24) \times '8'$ A1 ft
3	$570 \div 53 = 10.75.. = 11$ drops $1200 \div 280 = 4.28.. = 4$ drops per roll $11 \div 4 = 3.74 = 4$ rolls 12.45×4	49.80	5	M1 for $570 \div 53 (= 10.75.)$ M1 for $1200 \div 280 (= 4.28.)$ C1 for 11 drops or 4 drops per roll C1 for 4 rolls required from correct arithmetic A1 for 49.80
4(a)		$p(p + 1)$	1	B1 cao
4(b)	$4x - 12 - 2 + 2x$	$6x - 14$	3	M1 for $4x - 12 - 2 + 2x$ A1 cao

Question	Working	Answer	Mark	Notes
5	$35240 - 6475 = 28765$ $28765 \div 5 = 5753$ tax $5753 \div 12 = 479.4166\dots$	479.42	4	M1 for $35240 - 6475 (= 28765)$ M1 for $28765 \div 5$ oe ($= 5753$) M1 for '5753' $\div 12$ A1 for 479.41 or 479.42
6(a)	Delivery charge = £45 Atlas = $649 + 45 = \text{£}694$ Delivery charge = $2.5 \times 26 = \text{£}65$ Simpsons = $629 + 65 = \text{£}694$	The same price from both shops	5	B1 for reading from the graph of 43 to 47 M1 for Atlas = $649 + 45 (= \text{£}694)$ M1 for $2.5 \times 26 (= \text{£}65)$ A1 for 692 to 696 and 694 C1 for a correct conclusion from their costs.
6(b)		Delivery charge = $4 + 1.5x$ Where $x =$ number of miles	2	B1 for a standing charge of £4 B1 for £1.50/mile
7	$2(x - 3) = x + 5$ $2x - 6 = x + 5$ $x = 11$ $30 \times 2 + (11 + 5) \times 2$ $= 60 + 32$	92	4	M1 for $2(x - 3) = x + 5$ M1 for $2x - x = 5 + 6$ M1 for $30 \times 2 + (11 + 5) \times 2$ A1 cao
8	$(55 \times 5 + 65 \times 9 + 75 \times 22 + 85 \times 27 + 95 \times 17) \div 80$	80.25	4	M2 for fx where x are the mid interval values [M1 for consistent product of values within the intervals] M1 for $(55 \times 5 + 65 \times 9 + 75 \times 22 + 85 \times 27 + 95 \times 17) \div 80$ A1 cao

Question	Working	Answer	Mark	Notes
9	242/0.88	275	3	B1 for 0.88 03 88% seen M1 for 242/0.88 oe A1 cao
10(a)		Graph	2	B2 for all points plotted correctly [B1 for 2 or 3 points plotted correctly]
10(b)		Positive	1	B1 cao
10(c)	56/20	45 – 60	2	B2 for an answer in the range 45 to 60 [B1 for a line of best fit drawn]
11(a)	1 – 0.5 – 0.15	0.35	2	M1 for 1 – 0.5 – 0.15 A1 cao
11(b)		31/50	2	B2 cao [B1 for ?/50 or 31/? Where 31/? < 1]
12(a)		66	1	B1 for answer in the range 65 to 67
12(b)	144 000 – 101 000	43 000	2	M1 for a complete method of reading quartiles from the graph A1 for an answer in the range 42 000 to 45 000
13	$3p + 3m = 1 - 4m$ $3m + 4m = 1 - 3p$ $7m = 1 - 3p$	$\frac{1 - 3p}{7}$	3	M1 for $3p + 3m = 1 - 4m$ M1 for $3m + 4m = 1 - 3p$ A1 for $\frac{1 - 3p}{7}$ oe

Question	Working	Answer	Mark	Notes
14(a)		$5y^4$	2	B2 cao [B1 for $5y^?$ or $?y^4$]
14(b)	$7wx^2 \times 9w^6x^2$	$63w^7x^4$	2	B2 cao [B1 for $63w^7x^?$ or $63w^?x^4$]
15(i) (ii) (iii)		H D A	3	B1 cao B1 cao B1 cao
16	$2\pi \times 6^2 + \pi \times 12 \times 18$	905	3	M1 for $2\pi \times 6^2$ M1 for $\pi \times 12 \times 18$ A1 for 905 or better
17	AD = 7 cos 65 = 2.9583... BD = 7 sin 65 = 6.34415.. DC ² = 144 - 40.24829.. DC = 10.1858... 2.9583... + 10.1858...	13.1	6	M1 for cos 65 = AD/7 M1 for AD = 7 cos 65 M1 for BD = 7 sin 65 M1 for $12^2 = 6.34415^2 + DC^2$ M1 for DC ² = 144 - 40.24829.. A1 for 13.1 or better
18(a)		-5	1	B1 cao
18(b)	$8 = 2m - 2$ $m = 5$ $2x^2 = 5x - 2$ $2x^2 - 5x + 2 = 0$ $(2x - 1)(x - 2) = 0$ $x = 0.5$	(0.5, 0.5)	5	B1 for $m = 5$ M1 for $2x^2 - 5x + 2 = 0$ M1 for $(2x - 1)(x - 2) = 0$ A1 for $x = 0.5$ A1 for $y = 0.5$

Question	Working	Answer	Mark	Notes
19		Histogram	3	B3 for a fully correct histogram with fd axis fully labeled [B2 for a correct histogram with no fd labels B1 for one correct bar]
20	$12 \times 11 \times \text{rise} = 4\pi \times 3.5^3/3$ $\text{Rise} = 4\pi \times 3.5^3/(3 \times 12 \times 11)$	1.36	4	M1 for $4\pi \times 3.5^3/3$ M1 for $12 \times 11 \times \text{rise} = 4\pi \times 3.5^3/3$ M1 for $4\pi \times 3.5^3/(3 \times 12 \times 11)$ A1 for 1.36 or better
21	$94/567 \times 80$	13	2	M1 for $94/567 \times 80$ A1 for 13
22		Angle PSR = angle PTQ = 90° (angle between tgt and radius = 90°) PS = PT (tgts from a point are equal in length) Angle RPS = angle QPT (common) ASA	3	B1 for Angle PSR = angle PTQ = 90° (angle between tgt and radius = 90°) B1 for PS = PT (tgts from a point are equal in length) C1 for completion of proof quoting ASA oe

Question	Working	Answer	Mark	Notes
23	UB for external radius = 8.25 LB for internal radius = 7.65 $2\pi(8.25^3 - 7.65^3)/3 = k\pi$	75.879	4	B1 for either UB for external radius = 8.25 or LB for internal radius = 7.65 M1 for $2\pi(8.25^3 - 7.65^3)/3 = k\pi$ M1 for $2(8.25^3 - 7.65^3)/3$ A1 cao
24	$(4-y)^2 + y^2 = 40$ $16 - 8y + y^2 + y^2 = 40$ $2y^2 - 8y - 24 = 0$ $y^2 - 4y - 12 = 0$ $(y - 6)(y + 2) = 0$ $y = 6$ or $y = -2$	(-2, 6) and (6, -2)	6	M1 for $(4-y)^2 + y^2 = 40$ oe M1 for $16 - 8y + y^2 + y^2 = 40$ M1 for $y^2 - 4y - 12 = 0$ M1 for $(y - 6)(y + 2) = 0$ A1 for (-2, 6) A1 for (6, -2)