Question	Working	Answer	Marks	Notes
1		10	1	B1 cao
2		4 tens	1	B1 (Accept forty or 40)
3		56	1	B1 cao
4		3 : 1	1	B1 cao ignore units throughout
5		12	1	B1 cao
6 (a) (b)		8 or 27 10 or 15	2	B1 for 8 or 27 or both B1 for 10 or 15 or both *Do not allow a correct answer alongside an incorrect answer in any part, e.g., 8 and 16 in part (a)*
7	0.15×80	12	2	M1 for working towards finding 15% of 80 i.e. 0.15×80 oe **or** $8 + 4$ A1 cao
8	$12 \div 8 \times 10$	£15(.00)	2	M1 for starting the scaling process e.g. $12 \div 8$ or $10 \div 8$ A1 cao
9 (a) (b)		$10m - 15$ $5(2x + 3)$	2	B1 *(accept in any order)* B1 cao
10		No with correct figures	3	P1 for 1.20 + 0.70 + 2.30 + 2.30 (=6.5(0)) Or for adding 3 correct costs Or for adding 2 correct costs plus change Or for 10 – (2 correct costs) *Note: accept 2.30 + 2.30 (=4.60) as 2 costs* P1 for a complete correct method E.g. 10 – "6.50" Or 10 – 1.20 – 0.70 - 2.30 - 2.30 (=3.50) Or 1.20 + 0.70 + 2.30 + 2.30 + 3.30 (=9.80) *Note: Accept absence of "0" in pence column* A1 for **No** with correct figures e.g. 3.5(0) or 9.8(0) *Note could work in £ or p for P marks*
11 (a) (b)		5.62×10^{-3} 1452	2	B1 cao B1 cao
12	3m – 12 = 21 or m – 4 = 7	11	2	M1 for a correct first step e.g., $3 \times m - 3 \times 4 = 21$ oe **or** m – 4 = 21 $\div$ 3 (=7) or Note: Showing $\div$ 3 by each side of equation is sufficient. A1 cao

13		$x > -1$	1	B1 cao
14	$3x < 16 + 5$ or $3x < 21$	$x < 7$	2	M1 for isolating term in x or for $(x =) 7$ A1 cao
15 (a)		$\dfrac{15}{32}$	4	B1 oe
(b)	$\dfrac{25}{15} - \dfrac{12}{15}$	$\dfrac{13}{15}$		M1 for changing to an improper fraction $\left(\dfrac{5}{3}\right)$ M1 for changing to a common denominator with at least one numerator correct. A1 oe
16(a)		$2 \times 2 \times 31$	3	M1 for a complete method to find the prime factors; could be shown on a complete factor tree with no more than one error **or** by division by prime factors with no more than one error **OR** for 2, 2, 32, (1) A1 for $2 \times 2 \times 31$ oe i.e. $2^2 \times 31$
(b)		60		B1 cao
17		15.414	3	M1 For a complete method with relative place value including an intention to add all the appropriate elements of the calculation. E.g. $14680 + 734$ <table><tr><td></td><td>300</td><td>60</td><td>7</td></tr><tr><td>40</td><td>12000</td><td>2400</td><td>280</td></tr><tr><td>2</td><td>600</td><td>120</td><td>14</td></tr></table> $12000 + 2400 + 280 + 600 + 120 + 14 =$ 15414 M1 for figures 15414 A1 cao *(If 0 marks scored, SC1 for correct placement of the decimal point into their final answer)*

18		3^7	2	M1 for first step using a rule of indices e.g. $$3^5 \times 3^4 = 3^{5+4} (= 3^9)$$ **or** $3^5 \div 3^2 = 3^{5-2} (= 3^3)$ or $$3^4 \div 3^2 = 3^{4-2} (= 3^2)$$ A1 cao
19		Evaluation	1	B1 for error correctly identified (should be $+ 4$ not $- 4$), can be in the working i.e. circled.
20	Table of values OR using $y = mx + c$ with gradient 2 and y-intercept of -3	Single line drawn from (-2,7) to (2,1)	4	(Table of values) M1 for at least 2 correct attempts to find points by substituting values of x. M1 (dep) ft for correctly plotting at least 2 of their points (any points plotted from their table must be plotted correctly) A1 of the correct line from (-2, 7) or (2, 1) Alternative method 1 (No table of values) M2 for at least 2 correct points (and no incorrect points) correctly plotted or for a line segment of the graph of $y = 2x - 3$ drawn (ignore any additional incorrect line segments) [M1 for at least 3 correct points plotted with no more than 2 incorrect points] A1 for the correct line from (-2, 7) to (2,1) Alternative method 2 (Use of $y = mx + c$) M2 for a single straight line of gradient 2, passing through (0, -3) [M1 for a single straight line of gradient 2 or for a single straight line passing through (0, -3)] A1 for the correct line from (-2, 7) to (2, 1) B1 for their straight line extending from at least -2 to 2
21		Yes, supported by correct working	3	P1 for 36 : 48 oe **(for group 1)** Or $\frac{36}{84}$ oe Or $\frac{48}{84}$ P1 for $\frac{4}{7}$ or 3 : 4 oe **(for group 2)** Or $(\frac{36}{84} = \frac{3}{7})$ Or $(\frac{48}{84} = \frac{4}{7})$ Or $84 \times 3 \div 7 (= 36$ boys) Or $84 \times 4 \div 7 (= 48$ girls)

				Or N×3 ÷7 and N×4 ÷7 (N can be any number, other then 84, of students in 2ⁿᵈ group) A1 For YES with both ratios 3 : 4 oe Or for a correct pair of fractions and stating they are equivalent *Note: both equivalent forms of the ratios (fractions) must be the same.* *"Yes" may be implied from working*
22	$2x$ $x + 3$ $x + 2x + x + 3$	$x + 2x + x + 3$	2	M1 for $2x$ or $x + 3$ A1 for $x + 2x + x + 3$ oe
23		No (supported)	1	C1 for NO with evidence e.g. $3 \times 4^2 = 48$, $\sqrt{48}$ is not an integer Or He has multiplied by 3 first, but should have squared first
24		Correct conclusion from correct working	4	M1 for a method to find the interior angle e.g. $(8 - 2) \times 180 \div 8 \ (=135)$ Or exterior angle e.g. $360 \div 8 \ (= 45)$ of a regular octagon A1 for interior angle $= 135$ or exterior angle $= 45$ M1 for methos to find size of angle CDA e.g. $(360 - 135 \times 2) \div 2 \ (= 45°)$ or for stating and using BC parallel to AD C1 for method to complete the solution with angle CDJ $= 135$ e.g. $180 \div "45" \ (= 123)$ or angle BCD and angle CDJ are alternate angles

Extension

Question	Working	Answer	Marks	Notes
1		$2n^2 + n + 1$	3	M1 for a correct start to a method to find the nth term, e.g. equal 2ⁿᵈ difference imply a term in n^2 **or** sight of $an^2 + bn + c$ M1 for a method leading to $2n^2$ and either n or 1 A1 for $2n^2 + n + 1$ oe
2		0	2	M1 for writing $\frac{1}{9} = 3^{-2}, 9\sqrt{3} = 3^{2.5}, \frac{1}{\sqrt{3}} = 3^{-0.5}$ as powers of 3 with at least 2 correct **Or** for writing out $\frac{1}{9} \times 9\sqrt{3} \times \frac{1}{\sqrt{3}} = 1$ A1 cao