

No	Working	Answer	Mark	Notes
1	$525 \div 3$ or 175	875	2	M1 A1 cao
2	$5x - 2x = 3 - 1$ $3x = 2$	$\frac{2}{3}$ oe	3	M1 M1 A1 Accept 0.66 or 0.67 or better
3	Splits shape appropriately  eg $90 \times 70$ (6300) or $150 \times 90$ (13 500) eg $\left(\frac{110 + 90}{2}\right) \times 80$ (8000) or $\frac{1}{2} \times 80 \times 20$ (800)	14 300	4	M1 eg rectangle + triangle or rectangle + trapezium M1 dep on 1st M1 for relevant rectangle area M1 dep on 1st M1 for relevant triangle or trapezium area  A1 cao
4 a	$1 - (0.2 + 0.1 + 0.4)$	0.3	2	M1
b		170	1	A1 B1 cao
5	2.366	1.5381...	2	M1 A1 for at least first 4 figures
6 a		$y^2 + 2y$	1	B1 oe inc $y \times y + 2 \times y$
b	$6x + 3$ and $2x - 8$	$8x - 5$	2	M1 A1 cao
7 a	$\frac{68}{80}$ or 0.85	85	2	M1  A1 cao
b	eg $\frac{72}{0.6}$	120	2	M1  A1 cao

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8	a	-4	1	B1 cao
	b	$3n = 20 + 22$ or $-3n = -22 - 20$	2	M1
	c	14 $3n + 5$ oe	2	A1 cao B2 B1 for $3n$ oe seen
9	a	$\frac{3 \times 4}{2}$ or 6 "6"×7	3	M1
	b	"6"×2 $3 \times 7 + 4 \times 7 + 5 \times 7$ or $21 + 28 + 35$	3	M1 A1 M1 M1 A1 ft from "6"
10	a	$40 < v \leq 50$	1	B1
	b	$\frac{36}{200}$	2	M1 for fraction with a denominator of 200
	c	0.18 oe	1	A1 for numerator of 36 B1
	d	Points correct Curve or lines	2	B1 B1 ft
	e	50 (or $50\frac{1}{4}$ ) & 150 (or $150\frac{3}{4}$ ) indicated	2	M1 A1 ft from graph if B1 or B2 in (d)
11	i	$2^7$	3	B1 cao
	ii	$3^6$		B1 cao
	iii	0		B1 cao

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12	$12x - 10y = 26$ $18x - 15y = 39$  $12x - 9y = 24$ $20x - 15y = 40$  $y = -2$ $2x = 1$	$\frac{1}{2}, -2$	4	M1 for coefficients of $x$ or $y$ the same followed by correct operation. Condone one arithmetical error A1 cao  M1 (dep on 1st M1) for substituting for other variable A1 cao
13	a	$5.6 \times \frac{5}{8}$	2	M1
	b	$4.5 \times \frac{3}{5}$	2	A1 cao M1
		2.7		A1 cao
14	a	$75 = 3 \times 5^2$ and $105 = 3 \times 5 \times 7$ or 1, 3, 5, 15, 25, 75 and 1, 3, 5, 15, 21, 35, 105	2	M1
	b	$3 \times 5^2 \times 7$ or 75, 150, 225, 300, 375, 450, 525 and 105, 210, 315, 420, 525	2	A1 cao M1 Must be at least 3 correct in each list of multiples
		525		A1 cao
15	$mv - mu = I$  $mv = I + mu$	$\frac{I + mu}{m}$ or $u + \frac{I}{m}$	3	M1 or M2 for $v - u = \frac{I}{m}$  M1 A1

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16	a $d = \frac{k}{n}$ or $d \propto \frac{1}{n}$ $15 = \frac{k}{9}$	$\frac{135}{n}$	3	M1 M1 A1
	b $\frac{135}{7.5}$	18	2	M1 A1 cao
17	a	720, 1520	2	B2 B1 for each cao
	b	bar of height 12 little squares	1	B1
18	$5.3^2 - 3.8^2 = 28.09 - 14.44$ 13.65 "13.65"+6.2 <sup>2</sup> or 52.09 $\sqrt{"13.65"+6.2^2}$	7.22	5	M1 for squaring and subtracting A1 M1 for squaring and adding M1 (dep on previous M1) for square root A1 for 7.21 or 7.22 or answers rounding to either of these

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19	a	5.4 3.3 3 4.5	2	B2 for all 4 correct (B1 for 2 correct)
	b	Points	2	B1 dep on at least B1 in (a) for plotting at least 7 points which are correct or fit correctly $\pm \frac{1}{2}$ square
	c	0.59, 3.41	2	B1 dep on previous B1 for joining points with a smooth curve B2 B1 for each solution fit from graph
	d	$x + \frac{2}{x} = 7 - x$  $y = 7 - x$ or $x + y = 7$	2	M1  A1
20	a	$\frac{60}{360}$ oe or $\frac{180}{360}$ oe seen $\frac{2\pi \times 4}{2}$	3	B1  M1
	b	eg $\frac{1}{2} \times 8 \times 8 \times \sin 60^\circ$  $\frac{1}{2} \times \pi \times 4^2$	4	A1 for 12.6 or better (12.5663...) M1 for any method of finding $\Delta$ area M1 A1 for one correct evaluation to 3sf or better 27.7 (27.7128...) or 25.1 (25.1327...) A1 for 2.6 or better (2.580...)

No	Working	Answer	Mark	Notes
21	a $6.5 \times 8.5$	55.25	2	B2 for 55.25 (B1 for 6.5 or 8.5 seen)
	b $\frac{7.5}{8.5}$	0.882...	3	B1 for numerator 7.5 B1 for denominator 8.5 B1 for 0.88 or better (0.8823529...) Accept 0.9 if 7.5 and 8.5 seen
22	$(x-6)^2 = x+6$ $x^2 - 12x + 36 = x+6$ $x^2 - 13x + 30 = 0$ $(x-10)(x-3) = 0$	$x = 10$ or $x = 3$	5	B1 for $(x-6)^2$ B1 for $x+6$ M1 for $x^2 - 13x + 30 = 0$ M1 for $(x-10)(x-3) = 0$ A1 cao
23	$\frac{n}{10} \times \frac{n-1}{9} = \frac{1}{3}$  $3n(n-1) = 90$ or $n(n-1) = 30$  $3n^2 - 3n = 90$ or $n^2 - n = 30$		4	B1 for $\frac{n}{10}$ and $\frac{n-1}{9}$ seen M1 for $\frac{n}{10} \times \frac{n-1}{9} = \frac{1}{3}$ M1 A1