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 90×70 (6300) or 150×90 (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 A1
b		170	1	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

No		Working	Answer	Mark	Notes	
8	a		-4	1	B1	cao
	b	$3n = 20 + 22$ or $-3n = -22 - 20$		2	M1	
			14		A1	cao
	c		$3n + 5$ oe	2	B2	B1 for $3n$ oe seen
9	a	$\frac{3\times 4}{2}$ or 6		3	M1	
		"6"×7			M1	
			42		A1	
	b	"6"×2		3	M1	
		$3\times 7 + 4\times 7 + 5\times 7$ or 21 + 28 + 35			M1	
			96		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
			0.18 oe		A1	for numerator of 36
	c		20, 96, 164 192, 200	1	B1	
	d		Points correct	2	B1	
			Curve or lines		B1	ft
	e	50 (or 50¼) & 150 (or 150¾) indicated		2	M1	
			~ 13		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

No	Working	Answer	Mark	Notes
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	$5.6\times\frac{5}{8}$	3.5	2	M1 A1 cao
b	$4.5\times\frac{3}{5}$	2.7	2	M1 A1 cao
14 a	$75=3\times5^2$ and $105=3\times5\times7$ or 1, 3, 5, 15, 25, 75 and 1, 3, 5, 15, 21, 35, 105	15	2	M1 A1 cao
b	$3\times5^2\times7$ or 75, 150, 225, 300, 375, 450, 525 and 105, 210, 315, 420, 525	525	2	M1 Must be at least 3 correct in each list of multiples 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

No	Working	Answer	Mark	Notes
16 a	$d = \frac{k}{n}$ or $d \propto \frac{1}{n}$		3	M1
	$15 = \frac{k}{9}$			M1
		$\frac{135}{n}$		A1
b	$\frac{135}{7.5}$		2	M1
		18		A1 cao
17 a		720, 1520	2	B2 B1 for each cao
b		bar of height 12 little squares	1	B1
18	$5.3^2 - 3.8^2 = 28.09 - 14.44$		5	M1 for squaring and subtracting
	13.65			A1
	"13.65"+6.2^2 or 52.09			M1 for squaring and adding
	$\sqrt{\text{"13.65"+6.2}^2}$			M1 (dep on previous M1) for square root
		7.22		A1 for 7.21 or 7.22 or answers rounding to either of these

No	Working	Answer	Mark	Notes
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 ft correctly $\pm$ ½ square
				B1 dep on previous B1 for joining points with a smooth curve
c		0.59, 3.41	2	B2 B1 for each solution ft from graph Accept 1 or 2 dp
d	$x+\frac{2}{x}=7-x$		2	M1
		$y=7-x$ or $x+y=7$		A1
20 a	$\frac{60}{360}$ oe or $\frac{180}{360}$ oe seen		3	B1
	$\frac{2\pi\times4}{2}$			M1
		12.6		A1 for 12.6 or better (12.5663…)
b	eg $\frac{1}{2}\times8\times8\times\sin60°$		4	M1 for any method of finding Δ area
	$\frac{1}{2}\times\pi\times4^2$			M1
		25.1 or 27.7		A1 for one correct evaluation to 3sf or better 27.7 (27.7128…) or 25.1 (25.1327…)
		2.6		A1 for 2.6 or better (2.580…)

No	Working	Answer	Mark	Notes
21 a	6.5×8.5	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