Question		Working	Answer	Mark	Notes
1(a)		(400 – 308)/2 + 1	47	2	M1 for (400 – 308)/2 or 46 seen A1 cao
1(c)			$2n - 1$	2	B2 cao [B1 for $2n \pm k$ where $k \neq -1$]
2(a)			4 5 6 7 8 5 6 7 8 9 6 7 8 9 10	2	B2 for a fully correct table [B1 at least 5 correct entries]
2(b)		P(7 or 8) = 7/24 P(9 or 10) = 3/24 7/24 x 360 x 1 = 105 3/24 x 360 x 2 = 90 Takings = 360 x 0.5 = 180	A loss of £15	5	M1 for P(7 or 8) {= 7/24}or P(9 or 10) {= 3/24} oe M1 for '7/24' x 360 x 1(= 105) or'3/24' x 360 x 2 (= 90) M1 for 360 x 0.5 (= 180) A1 for 180 and 195 seen C1 for 'a loss of £15' oe
3(a)		√(48/3)	±4	2	M1 for √(48/3) A1 for 4 or -4 or ±4
3(b)		$2x + 4 = 6(x - 1)$ $2x + 4 = 6x - 6$ $10 = 4x$	2.5	3	M1 for $2x + 4 = 6(x - 1)$ M1 for $4 + 6 = 6x - 2x$ A1 cao
4		9 x 8 + ½ x 5 x 12	102	4	M1 for splitting M1 for either 9 x 8 or ½ x 5 x 12 oe M1 for 9 x 8 + ½ x 5 x 12 A1 cao

Question		Working	Answer	Mark	Notes
5(a)			Vague response boxes Question does not include a time period	2	B1 for a correct criticism of the question B1 for a correct criticism of the response boxes
5(b)			How many times a month do you go to a restaurant? 0 1 – 3 4 – 5 6+	2	B1 for a relevant question inc. time period B1 for at least 3 non-overlapping response boxes
5(c)			A leading question Restricted/biased sample	2	B1 for a 'leading/biased' question oe B1 for 'small/biased'sample oe
6(a)		19.5 + 19.5/5	23.40	3	M1 for 19.5/5 M1 for 19.5 + 19.5/5 oe A1 cao
6(b)		72 ÷ 6 = 12 12 x 2	24	3	M1 for 72 ÷ 6 M1 for '12' x 2 A1 cao
7		(1 – 0.3 – 0.2)/2 x 200	50	4	M1 for 1 – 0.3 – 0.2 M1 for (1 – 0.3 – 0.2)/2 or 0.25 seen M1 for '0.25' x 200 A1 cao
8		½ x 6 x 8 x 2 + (8+6+10) x 9	264 cm^2	4	M1 for ½ x 6 x 8 or 8x9 or 6x9 or 10x9 M1 for ½ x 6 x 8 x 2 + (8+6+10) x 9 oe A1 for 264 B1 ft for cm^2

Question		Working	Answer	Mark	Notes
9(a)			**9**, 3, -1, -3, **-3, -1**, 3	2	B2 for fully correct table [B1 for 1 or 2 correct entries]
9(b)			Graph	2	B2 ft for a fully 'correct' graph through their points [B1 at least 6 of their correctly plotted points]
9(c)			-3.25	1	B1 for an answer in the range –3.1 to -3.5
10(a)		6/12	½	2	M1 for 6/12 oe A1 cao
10(b)		$3+\frac{8}{12}+\frac{9}{12}=3\frac{17}{12}$	$4\frac{5}{12}$	3	M1 for $\frac{8}{12}+\frac{9}{12}$ oe M1 for $3+\frac{17}{12}$ A1 cao
11(a)		44800 ÷ 5	8960	2	M1 for 44800 ÷ 5 A1 cao
11(b)		7130 x 5	35650	2	M1 for 7130 x 5 A1 cao
12(a)		$3x > 2 – 12$	$x > -10/3$ oe	2	M1 for $3x > 2 – 12$ A1 for $x > -10/3$ or better
12(b)		$x^2 – 7x + 3x – 21$	$x^2 – 4x – 21$	2	M1 for 3 correct out of 4 terms or 4 correct terms ignoring signs A1 for $x^2 – 4x – 21$ oe

Question		Working	Answer	Mark	Notes
13		165 ÷ 82 > 2 133 ÷ 82 < 2	Since 165 ÷ 82 > 2 and 133 ÷ 82 < 2, the scale factors are different; so not similar	3	M1 for considering 165 ÷ 82 or 133 ÷ 82 oe A1 for correct estimated answers C1 for a correct conclusion based upon their answers
14			Triangle with coordinates (-3,-1.5), (-4.5,-1.5) and (-3,-4.5)	3	B3 for a correct triangle [B2 for an enlargement of 1.5 about (0,0) or for an enlargement of -1 about (0,0) B1 for an enlargement of 1.5 about any point]
15(a)		$\frac{x}{3} - 5 = 3x - 6$	3/8	4	M1 for $3x - 6$ M1 for $x - 15 = 9x - 18$ M1 for rearranging so that numbers and x-terms or on opposite sides of the equation A1 for 3/8 oe
15(b)		$(x - 6)(x + 3)$	$x = 6$ and $x = -3$	3	M1 for $(x \pm 6)(x \pm 3)$ A1 for $x = 6$ and A1 for $x = -3$
16(a)		2^6	64	1	B1 cao
16(b)			3	1	B1 cao
16(c)		$\sqrt{(2^4 x 3^2)} = 2^2 \times 3$	12	2	M1 for $2^2 \times 3$ oe A1 cao
16(d)		$1/4^2$	1/16	1	B1 cao

Question		Working	Answer	Mark	Notes
17(a)		$4 = k/3^2$ $F = 36/x^2$ $36/2^2$	9	4	M1 for $F = k/x^2$ M1 for $4 = k/3^2$ M1 for '36'/2^2 A1 cao
17(b)		$64 = 36/x^2$ $\sqrt{(36/64)}$	3/4	2	M1 for $64 = 36/x^2$ A1 cao
18		$\frac{6}{15}\times\frac{4}{14}+\frac{4}{15}\times\frac{6}{14}+\frac{4}{15}\times\frac{3}{14}$ $+\frac{4}{15}\times\frac{5}{14}+\frac{5}{15}\times\frac{4}{14}$	10/21		M1 for $\frac{4}{14}$ *or* $\frac{6}{14}$ *or* $\frac{3}{14}$ *or* $\frac{4}{14}$ M1 for $\frac{6}{15}\times\frac{4}{14}$ *or* $\frac{4}{15}\times\frac{6}{14}$ *or* $\frac{4}{15}\times\frac{3}{14}$ *or* $\frac{4}{15}\times\frac{5}{14}$ *or* $\frac{5}{15}\times\frac{4}{14}$ M1 for $\frac{6}{15}\times\frac{4}{14}+\frac{4}{15}\times\frac{6}{14}+\frac{4}{15}\times\frac{3}{14}+\frac{4}{15}\times\frac{5}{14}+\frac{5}{15}\times\frac{4}{14}$ A1 for 10/21 oe
19		$\sqrt{8}(\sqrt{5}+\sqrt{20}) - \sqrt{5}\times\sqrt{2}$ $=2\sqrt{2}(\sqrt{5}+2\sqrt{5}) - \sqrt{5}\times\sqrt{2}$ $=2\sqrt{2}\times3\sqrt{5} - \sqrt{5}\times\sqrt{2}$ $=6\sqrt{10} - \sqrt{10} = 5\sqrt{10}$ $5\sqrt{10} / 6\sqrt{10}$ x 100 500/6	83.33…	4	M1 for $\sqrt{8}(\sqrt{5}+\sqrt{20}) - \sqrt{5}\times\sqrt{2}$ oe M1 for $2\sqrt{2}(\sqrt{5}+2\sqrt{5}) - \sqrt{10}$ M1 for $5\sqrt{10} / 6\sqrt{10}$ x 100 A1 for 83.33…
20(i)		q + ½ (p – q)	½ (p+q)	5	M1 for QP = q – p M1 for OS = q + ½ QP A1 for ½ (p+q)
(ii)		RS = ½ (p+q) – ½ p = ½ q RS = ½ OQ parallel	Proof		M1 for RS = ½ (p+q) – ½ p C1 for conclusion of proof; ie RS = ½ q and relating this to OQ = q

Question		Working	Answer	Mark	Notes
21(a)			$\pi x^2/3$ $2\pi x/3$	2	B1 for $\pi x^2/3$ oe B1 for $2\pi x/3$ oe
21(b)		A = $2\pi x/3 = 2\pi r$ r = $x/3$ V = $1/3 \times \pi \times (x/3)^2 \times h = 3 \times \pi x^2/3$ $1/3\ (1/3)^2 \times h = 1$	27	3	M1 for $2\pi x/3 = 2\pi r$ M1 for $1/3 \times \pi \times (x/3)^2 \times h = 3 \times \pi x^2/3$ A1 cao