

Section B

7	(a)	5 points plotted (at least 4 correct): <table><tr><td>x^2</td><td>1</td><td>4</td><td>9</td><td>16</td><td>25</td></tr><tr><td>y</td><td>14</td><td>21</td><td>37</td><td>57</td><td>87</td></tr></table> f.t. line of best fit drawn with a ruler	x^2	1	4	9	16	25	y	14	21	37	57	87	P1 C1	14 on line, rest between lines within 1 mm
x^2	1	4	9	16	25											
y	14	21	37	57	87											
	(b)	$y = mx^2 + c$ $2.5 \leq m \leq 3.5$ $9 \leq c \leq 10$ or f.t. from their ruled line extended backwards to cross y axis	M1 A1 A1	M1 only if no ruled line with numerical m and $c \neq 0$ -1 for missing ' $y =$ ' SC1: $y = mx + c$ with acc. numerical m & c After 0, SC1: grad = 2.5 to 3.5												
			5													
8	(a)	<table><tr><th>Age</th><th>Number</th></tr><tr><td>$16 \leq a < 25$</td><td>22</td></tr><tr><td>$25 \leq a < 40$</td><td>33</td></tr><tr><td>$40 \leq a < 60$</td><td>28</td></tr><tr><td>$60 \leq a < 65$</td><td>17</td></tr><tr><td>Total</td><td>100</td></tr></table>	Age	Number	$16 \leq a < 25$	22	$25 \leq a < 40$	33	$40 \leq a < 60$	28	$60 \leq a < 65$	17	Total	100	3	-1 for each incorrect figure If zero, M1: any correct calculation seen SC2: 18, 31, 41, 10 (using class width in place of frequency)
Age	Number															
$16 \leq a < 25$	22															
$25 \leq a < 40$	33															
$40 \leq a < 60$	28															
$60 \leq a < 65$	17															
Total	100															
	(b)	Each age group is fairly represented (see list)	1	Stratified sampling is representative of the whole population												
			4													
9		£8500	3	M1: 1.045 seen + M1: div. by 1.045^n with $n > 2$ SC1: div. by 1.45^{10} or W2: any ans. rounding to £8500												
			3													
10	(a)	$a = 4, b = 40$	3	M1: $(x+4)^2$ and M1: $(-24 - \text{'their } a^2\text{'})$ s.o.i. e.g.: $a = 4$ and $b = -40$ scores M1 + M1												
	(b)	-40 or $\sqrt{\quad}$ from (a)	1	condone $(-4, -40)$												
	(c)	$2.3(24....)$ $-10.3(24... \text{ rot.})$ SC1: signs reversed or surd form	1 1	or f.t. 'their $-a \pm \sqrt{b}$ ' to 1 d.p. from expression of form ' $(x+a)^2 - b$ '												
			6													
11		(0)99.6 to (0)99.7	4	W3: $(B =) 43.6$ to 43.7 or A1: 44 (may be in diagram) or M2: $\sin B = \frac{10 \sin 56}{12}$ or M1: $\frac{\sin B}{10} = \frac{\sin 56}{12}$ (o.e.) and A1: $\sqrt{\text{'their } B' + 56}}$ or 100° After 0, SC1: 'their B' + 56												
			4													
12	(a)	£81 to £82	1													
	(b)	$\frac{x+80+64+94}{4} = \text{their(a) (o.e.)}$ £86 to £90 or f.t.	M1 A1													
			3													
			25													
Paper Total = 50																