Paper 1MA1: 1H			
Question	**Working**	**Answer**	**Notes**
1		32.968	M1 for correct method (condone one error) A1 for digits 32968 A1 ft (dep M1) for correct placement of decimal pt
2		$m^2 + 10m + 21$	M1 for at least 3 terms out of a maximum of 4 correct from expansion A1
3		152	M1 Start to method $ABD = 38^o$ **and** BAD or DBC or $DCB = 38^o$ M1 ADB or $BDC = 180 - 2 \times 38$ (=104) A1 for 152 with working
4 (a)		48	P1 start to process eg. 3×80 (=240) P1 '240' ÷ 5 A1
(b)			C1 eg. she may drive a different distance and therefore her average speed could be different

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Question	**Working**	**Answer**	**Notes**
5		28	P1 Process to start to solve problem eg. $\frac{3}{5}\times 40$ **or** divide any number in the ratio 3:2 P1 Second step in process to solve problem eg. $\frac{2}{5}\times 10$ or find number of males/females under 25 for candidate's chosen number P1 for complete process A1
6		Correct sketch	C1 interprets diagram eg. draw a solid shape with at least two correct dimensions C1 draws correct prism with all necessary dimensions.
7		400	P1 Start to process eg. 1200 ÷ 60 A1 400 oe (accept number of whole pizzas eg. 400÷4 = 100 with 4 people per pizza) C1 Eg. Assumption that sample is representative of population – it may not be all 1200 people are going to the party – need less pizza if they don't, assume 4 people per pizza – if different may need more/fewer pizzas

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Question	**Working**	**Answer**	**Notes**
8		$x = 21,\ y = 50$	P1 process to start solving problem eg. form an appropriate equation P1 complete process to isolate terms in x A1 for $x = 21$ P1 complete process to find second variable A1 $y = 50$
9		2.7×10^4	M1 For evidence of a correct method eg. $27 \times 10^{-4+7}$ A1
10 (a)		8	B1
(b)		$\frac{25}{4}$ oe	M1 for correct first step A1
11 (a)		2.5×10^{24}	P1 process to estimate or divide P1 a complete process eg. $(1 \times 10^3) \div (4 \times 10^{-22})$ A1
(b)		Under-estimate	C1 ft from (i) Eg. under estimate as number rounded up but in denominator of fraction

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Question	**Working**	**Answer**	**Notes**
12		150 000	M1 $60 \div 100^2$ **or** $900 \div 60$ **or** $900 \div$ "60" A1
13		6.4	P1 Start to process eg. find scale factor (0.4) or $\frac{AE}{4} = \frac{4}{10}$ P1 Complete process to find area A1
14 (a)	Median = 22; lq = 18; uq = 26	Box plot	C1 Start to interpret information eg. one of median, lq, uq correct C1 Starts to communicate information eg. box plot with box, whiskers and at least 3 of median, lq, uq, min and max correct C1 Correct box plot
(b)		Ben with reason	M1 interpret information eg ft from box plot to find iqr (8) or range (11) C1 ft eg. Ben with lower iqr (8) and range (11)
15		No with reason	C1 Starts to formulate reason eg. No with partial explanation or 0.8×0.7 or starts to use figures C1 No with full explanation eg. $0.8 \times 0.7 = 0.56$ so only 44% reduction
16		$5(2x + 1)(2x - 1)$	M1 for $5(4x^2 - 1)$ A1

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Question	**Working**	**Answer**	**Notes**
17		$a = \dfrac{7-3r}{r-2}$	M1 Remove fraction and expand brackets M1 Isolate terms in a A1
18		Given result	M1 For length scale factor eg $\sqrt{\frac{4}{9}}$ **or** 120 : 405 M1 $\left(\sqrt{\frac{4}{9}}\right)^3 \times 405$ **or** $2^3 : 3^3$ (from 120 : 405) A1 120 from correct arithmetic **or** conclusion relating $2^3 : 3^3$ with $2^2 : 3^2$ with correct working
19		$x > 4$, $x < -1$	M1 rearrange quadratic and factorise M1 critical values of 4 and −1 found A1
20 (a)		(-2, -2)(-6, -2) (-2,-4) (-4, -4)	M1 Shape drawn in correct orientation A1
(b)		Enlargement sf −0.5 centre (0,0)	C1

Paper 1MA1: 1H			
Question	**Working**	**Answer**	**Notes**
21 (a)		25	C1 For interpretation eg.. area equated to 1750m P1 Process to solve equation A1
(b)		Description	C1 Start to interpret graph eg. describe or give acceleration for one stage of the journey or state that acceleration is constant in all 3 parts C1 Describe acceleration for all stages of the journey or give acceleration for all 3 stages (1.25 m/s^2 ; 0 m/s^2 ; –0.625 m/s^2)
22			C1 C1 for frequencies used for heights or areas not proportional to frequencies C1 C1 for 2nd mistake - final bar of wrong width
23		Given result	C1 Correct first step towards simplifying expression eg. $\frac{\sqrt{2}}{\sqrt{2}+1}$ C1 Correct step to rationalise denominator C1 Conclusion to given result

Paper 1MA1: 1H			
Question	**Working**	**Answer**	**Notes**
24		25	P1 For process to start to solve. Eg use of x and $4x$ or $x/5x$ and $4x/5x$ P1 process to form equation eg $\frac{x}{5x} \times \frac{x-1}{5x-1} = \frac{6}{155}$ P1 Processes to eliminate fractions and reduce equation to linear form eg. $155x - 155 = 150x - 30$ A1
25		$3y - 4x = 11$	P1 process to start to solve problem eg. draw a diagram, find gradient of AB (0.5) P1 process to use gradients eg. find gradient of BC (-2) P1 Process to find y coordinate of C (9) P1 Process to find equation of AC A1