Question		Working	Answer	Mark	AO		Notes
1	a		1407	1	AO1	B1	
	b		2095	1	AO1	B1	
	c		60	1	AO1	B1	accept tens, sixty
	d		1000	1	AO1	B1	
2	a		× at 1	1	AO3	B1	
	b		× at 0.5	1	AO3	B1	
3	a		Berlin	1	AO1	B1	
	b		1	1	AO1	B1	
	c		-7	1	AO1	B1	
	d	(2 + −8) ÷ 2 oe			AO1	M1	method to find midpoint
			−3	2		A1	
4	ai		$\frac{1}{30}$ oe	1	AO3	B1	
	aii		0	1	AO3	B1	
	b		$\frac{7}{10}$ oe	1	AO3	B1	
5	a		9	1	AO1	B1	
	b		11.8	1	AO1	B1	
	c		0.6	1	AO1	B1	

Question		Working	Answer	Mark	AO	Notes
6	**a**		B, G	1	AO2	B1
	b		F	1	AO2	B1
	c		D	1	AO2	B1
7		Line from P at 50° to base **or** arc from Q of length 7.5 cm			AO2	M1
			correct triangle	2		A1
8	**a**		6.8	1	AO1	B1
	b		729	1	AO1	B1
	c		2.7	1	AO1	B1
9	**a**		$4m$	1	AO1	B1
	b		$18kp$	1	AO1	B1
	c		4	1	AO1	B1
	d	$4\times-7-3\times5$ **or** -28 and -15			AO1	M1
			-43	2		A1
	e	$9 = 4r - 3\times8$ **or** $9 = 4r - 24$			AO1	M1
		$9 + 24 = 4r$				M1 isolate term in r
			8.25 oe	3		A1
	f		$5(c + 6)$	1	AO1	B1

Question		Working	Answer	Mark	AO		Notes
10	**a**	360 × 7 (=2520)			AO1	M1	
		(4500 – '2520')÷9				M1	dep
			220	3		A1	
	b				AO2	M1	clear evidence of method to work out time interval
			3 hours 20 mins	2		A1	accept 200 minutes
11	**a**	80 ÷ 30 (=2.66…)			AO3	M1	
		80 ÷ 30 × 195				M1	
			520	3		A1	
	b	$\frac{120}{800} \times 360$ oe			AO3	M1	
			54	2		A1	
12		5 × 3 (=15) **or** 7 × (11 – 5)(=42) **or** 11 × 7 (=77) **or** 5×(7-3)(=20)			AO1, AO2	M1	method to find area of part of floor
		or 11×3(=33) **or** (11-5)×(7-3)(=24)					
		5 × 3 + 7 × (11 – 5)(=57) **or**				M1	complete method to find area
		11 × 7 − 5×(7-3)(=57) **or**					
		11 × 3 + (11-5)×(7-3)(=57)					
		'57' ÷ 2 (28.5)				M1	dep on at least M1
		'29' × 24.8				M1	
			719.20	5		A1	

Question	Working	Answer	Mark	AO		Notes
13	345 ÷ 200 (=1.725) **or** 345 × 100 (=34500)			AO2	M1	Division by 200 or conversion of units
	'1.725' × 100 **or** '34500' ÷ 200				M1	Division by 200 and conversion of units
		172.5	3		A1	
14	(6 + 8) ÷ 2 (=7) **or** (−5 + 3) ÷2 (= −1)			AO1	M1	
		(−1, 7)	2		A1	
15 a	900 ÷ 6 × 15 oe			AO1	M1	
		2250	2		A1	
b	3 × 1000 ÷ 750 × 6			AO1	M1	
		24	2		A1	
16	2 × 2 × 5 or 2 × 3 × 5 or 3 × 3 × 5			AO1	M1	for one of 20, 30, 45 written as product of prime factors or
	or two of					list of at least 3 multiples of any two of 20, 30, 45
	20, 40, 60 …					
	30, 60, 90 …					
	45, 90, 105					
	2 × 2 × 5 and 2 × 3 × 5 and 3 × 3 × 5				M1	
	or all of					
	20, 40, 60 , 80 … 180					
	30, 60, 90 … 180					
	45, 90, 105 … 180					
		180	3		A1	for 180 or 2 × 2 × 3 × 3 × 5 oe

Question		Working	Answer	Mark	AO		Notes
17					AO1	M1	for 7n + k (k may be zero)
			7n – 5 oe	2		A1	
18		$\frac{1}{2}\times(10+14)\times 9$ oe (= 108)			AO2	M1	for area of cross section
		'108' × 6 (=648)				M1	(dep on previous M1) for volume of prism
		'648' × 0.7				M1	(independent)
			453.6	4		A1	accept 454
19	**a**		p^9	1	AO1	B1	
	b		m^{-12}	1	AO1	B1	
	c		1	1	AO1	B1	
	d	5x + 35 = 2x – 10 or $x+7=\frac{2x}{5}-\frac{10}{5}$			AO1	M1	for removing bracket or dividing all terms by 5
		eg. 5x – 2x = −10 – 35 or $7+\frac{10}{5}=\frac{2x}{5}+x$				M1	for isolating x terms in a correct equation
			−15	3		A1	dep on M1

Question	Working	Answer	Mark	AO		Notes
20	14000 × 4 (=56000)			AO1	M1	NB. multiplication by 4 may occur before or after percentage decrease
	0.075 × '56000' (=4200) **or** 0.075 × 14000 (=1050)				M1	M2 for 0.925 × '56000' **or** 0.925 × 14000
	'56000' – '42000' **or** 14000 – '1050'				M1	(dep)
		51 800	4		A1	
21 **a**		triangle with vertices (3, -1) (3, -4) (5, -4)	1	AO2	B1	
b		Rotation		AO2	B1	
		centre (-3, 0)			B1	
		90^{o} anticlockwise	3		B1	accept $+90^{0}$, 270^{o} clockwise, -270^{o} NB. If more than one transformation then no marks can be awarded

Question	Working	Answer	Mark	AO	Notes
22 **a**	4×15 (=60) **or** $\frac{a+b+c+d}{4}=15$ **or** $4\times15-39$	21	2	AO3	M1 A1
b	$d-a=10$ **or** $a=11$ **or** $a=$ "21" -10 **or** $b+c=39-11=28$	14	2	AO3	M1 ft from (a) (can be implied by 11, b, c, 21 **OR** a, b, c, d with $b+c=28$) A1 cao
23	$0.02 \times 40\,000$ (=800) **or** $1.02 \times 40\,000$ (=40800) **or** 2400 "40800"×0.02(=816) **and** "41616"×0.02(=832.32) **OR** 2448.32	42448.32	3	AO1	M1 M1 (dep) method to find interest for year 2 **and** year 3 } M2 for $40\,000 \times 1.02^3$ A1
24	$3x+y=13$ **or** $6x+2y=26$ $-\ 3x-6y=27$ $+\ x-2y=9$ eg. $3x-2=13$ **or** $15+y=13$	5,−2	3	AO1	M1 multiplication of one equation with correct operation selected **or** rearrangement of one equation with substitution into second M1 (dep) correct method to find second variable A1 for both solutions dependent on correct working

Question		Working	Answer	Mark	AO		Notes
25	**a**	e.g. $\frac{10}{18}+\frac{3}{18}$ **or** $\frac{30}{54}+\frac{9}{54}$			AO1	M1	for two fractions with common denominator with at least one numerator correct
			answer given	2		A1	correct answer from correct working
	b	$\frac{14}{3}\div\frac{32}{9}$			AO1	M1	
		$\frac{14}{3}\times\frac{9}{32}$ **or** $\frac{126}{27}\div\frac{96}{27}$ **or** $\frac{42}{9}\div\frac{32}{9}$				M1	
			answer given	3		A1	correct answer from correct working
26		(6 – 2) × 180 (=720)			AO2	M1	complete method to find sum of interior angles
		'720' – (86 + 123 + 140 + 105) (=266) **or** '720' – 454 (=266)				M1	dep on 1st method mark
		'266' ÷ 2				M1	dep on 1st method mark
			133	4		A1	