

International GCSE in Mathematics A - Paper 2F mark scheme

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	\times at 1	1	AO3	B1
	b	\times at 0.5	1	AO3	B1
3	a	Berlin	1	AO1	B1
	b	1	1	AO1	B1
	c	-7	1	AO1	B1
	d	$(2 + -8) \div 2$ oe	-3	AO1	M1 method to find midpoint
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 c		B, G F D	1 1 1	AO2 AO2 AO2	B1 B1 B1
7	Line from P at 50° to base or arc from Q of length 7.5 cm			AO2	M1
8 a b c		correct triangle	2	A1	
9 a b c d		6.8 729 2.7	1 1 1	AO1 AO1 AO1	B1 B1 B1
9 a b c d		$4m$ $18kp$ 4	1 1 1	AO1 AO1 AO1	B1 B1 B1
e	$4r - 3 \times 8$ or $9 = 4r - 24$ $9 + 24 = 4r$	-43 8.25 oe $5(c + 6)$	2 3 1	AO1 AO1 AO1	A1 M1 M1
f					isolate term in r

Question	Working	Answer	Mark	AO	Notes
10	a $360 \times 7 (=2520)$ $(4500 - 2520) \div 9$		A01	M1	
	b 220	3	A02	M1 A1	clear evidence of method to work out time interval accept 200 minutes
11	a $80 \div 30 (=2.66\dots)$ $80 \div 30 \times 195$	3 hours 20 mins	2	A03	M1 M1 A1
	b $\frac{120}{800} \times 360$ oe	520	3	A03	M1
12	$5 \times 3 (=15)$ or $7 \times (11 - 5)(=42)$ or $11 \times 7 (=77)$ or $5 \times (7-3)(=20)$ or $11 \times 3 (=33)$ or $(11-5) \times (7-3)(=24)$ $5 \times 3 + 7 \times (11 - 5)(=57)$ or $11 \times 7 - 5 \times (7-3)(=57)$ or $11 \times 3 + (11-5) \times (7-3)(=57)$ '57' $\div 2$ (28.5) '29' $\times 24.8$	54	2	A01, AO2	M1 method to find area of part of floor M1 complete method to find area M1 dep on at least M1 M1 A1

Question	Working	Answer	Mark	AO	Notes
13	$345 \div 200 (=1.725) \text{ or } 345 \times 100 (=34500)$ ‘1.725’ $\times 100$ or ‘34500’ $\div 200$	172.5	3	A02 M1 A1	Division by 200 or conversion of units Division by 200 and conversion of units
14	$(6 + 8) \div 2 (=7) \text{ or } (-5 + 3) \div 2 (= -1)$	(-1, 7)	2	A01 M1 A1	
15	a $900 \div 6 \times 15 \text{ oe}$ b $3 \times 1000 \div 750 \times 6$	2250	2	A01 M1 A1	
16	$2 \times 2 \times 5$ or $2 \times 3 \times 5$ or $3 \times 3 \times 5$ or two of 20, 40, 60 ... 30, 60, 90 ... 45, 90, 105	24	2	A01 M1 A1	for one of 20, 30, 45 written as product of prime factors or list of at least 3 multiples of any two of 20, 30, 45 M1
					$2 \times 2 \times 5$ and $2 \times 3 \times 5$ and $3 \times 3 \times 5$ or all of 20, 40, 60, 80 ... 180 30, 60, 90 ... 180 45, 90, 105 ... 180
			180	3	A1 for 180 or $2 \times 2 \times 3 \times 3 \times 5$ oe

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

Question	Working	Answer	Mark	AO	Notes
20	$14000 \times 4 (=56000)$ $0.075 \times '56000' (=4200) \text{ or}$ $0.075 \times 14000 (=1050)$ $'56000' - '42000' \text{ or}$ $14000 - '1050'$		A01	M1	NB. multiplication by 4 may occur before or after percentage decrease
				M1	$\left. \begin{array}{l} \text{M2 for } 0.925 \times \\ '56000' \text{ or} \\ 0.925 \times 14000 \end{array} \right\} 0.925 \times 14000$
21	a b	triangle with vertices $(3, -1) (3, -4) (5, -4)$ Rotation centre $(-3, 0)$ 90° anticlockwise	4 A1 1 AO2	B1 B1 B1 B1	NB. If more than one transformation then no marks can be awarded accept $+90^\circ, 270^\circ$ clockwise, -270°

Question	Working	Answer	Mark	AO	Notes
22 a	$4 \times 15 (=60) \text{ or } \frac{a+b+c+d}{4} = 15$ or $4 \times 15 - 39$		2	A03	M1
b	$d - a = 10 \text{ or } a = 11 \text{ or}$ $a = "21" - 10 \text{ or}$ $b + c = 39 - 11 = 28$	21	2	A03	A1 M1 ft from (a) (can be implied by 11, b, c, 21 OR a, b, c, d with $b + c = 28$)
23	$0.02 \times 40\ 000 (=800) \text{ or}$ $1.02 \times 40\ 000 (=40800) \text{ or } 2400$ "40800" $\times 0.02 (=816)$ and "41616" $\times 0.02 (=832.32)$ OR 2448.32	14		A1 cao	M1 (dep) method to find interest for year 2 and year 3 M2 for $40\ 000 \times 1.02^3$
24	$3x + y = 13 \text{ or } 6x + 2y = 26$ $- 3x - 6y = 27 \text{ or } x - 2y = 9$ eg. $3x - 2 = 13$ or $15 + y = 13$	42448.32	3	A01	A1 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 $\frac{30}{54} + \frac{9}{54}$		A01	M1	for two fractions with common denominator with at least one numerator correct
b	$\frac{14}{3} \div \frac{32}{9}$ $\frac{14}{3} \times \frac{9}{32}$ or $\frac{126}{27} \div \frac{96}{27}$ or $\frac{42}{9} \div \frac{32}{9}$	answer given answer given	2 A01	A1 M1	correct answer from correct working
26	$(6 - 2) \times 180 (=720)$ $'720' - (86 + 123 + 140 + 105)$ $(=266)$ or $'720' - 454 (=266)$ $'266' \div 2$		3	AO2	M1 complete method to find sum of interior angles M1 dep on 1 st method mark M1 dep on 1 st method mark A1