



General Certificate of Secondary Education

Mathematics 4307

Specification B

Module 5 Paper 1 Tier F 43055/1F

Mark Scheme

2009 examination - November series

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The following abbreviations are used on the mark scheme:

M	Method marks awarded for a correct method.
A	Accuracy marks awarded when following on from a correct method. It is not necessary always to see the method. This can be implied.
B	Marks awarded independent of method.
M dep	A method mark which is dependent on a previous method mark being awarded.
ft	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
SC	Special Case. Marks awarded for a common misinterpretation which has some mathematical worth.
oe	Or equivalent.
eeoo	Each error or omission.

MODULE 5 FOUNDATION TIER

43055/1F

1(a)(i)	Millimetre(s)	B1	mm
1(a)(ii)	Litre(s)	B1	l
1(a)(iii)	Kilometre(s)	B1	km km/h
1(b)	$(5 \times) 1000 \times 100$	M1	100 cm = 1 m and 1000 m = 1 km oe 100 × 1000 100 000 seen
	500 000	A1	

2(a)(i)	1.5 or $1\frac{1}{2}$	B1	oe 1.50
2(a)(ii)	1500	B1 ft	ft (a)(i) × 1000
2(b)	Valid combination of numbers adding up to 5 (Each number must be less than or equal to 2)	B1	eg 2 and 2 and 1 1 and 1 and 1 and 1 and 1 Accept explanations that imply a valid combination leading to 5 eg 1 kg, 5 times 1 kg times 5 1.5 three times and add 0.5 Do not accept: Weigh in parts, 1 kg at a time
2(c)(i)	3	B1	
2(c)(ii)	800×1.5 or 0.8×1.5	M1	oe 800 + 400 0.8 + 0.4
	1200 or 1.2	A1	
	Bought enough	A1	oe

3(a)(i)	4.5 or $4\frac{1}{2}$	B1	oe 4.50
3(a)(ii)	45	B1	
3(b)(i)	5	B1	
3(b)(ii)	Any multiple of 4 4 or 8 or 12 ...	B1	Do not accept 20
3(c)	3rd box ticked	B1	

4(a)(i)	15	B1	
4(a)(ii)	25	B1	
4(b)	Reciprocal or inverse	B1	

5(a)(i)	Valid sequence of 4 (or more numbers)	B1	Ignore further working All from list
5(a)(ii)	Correct rule	B1 ft	ft from their sequence Condone from a three number sequence
5(b)(i)	Different valid sequence of 4 (or more numbers)	B1	Ignore further working Condone one common number with (a)
5(b)(ii)	Correct rule	B1	ft from their sequence Condone from a three number sequence
5(c)(i)	$x + 7$	B1	oe $1x + 7$ Allow $n + 7$ (change of letter)
5(c)(ii)	$x (+) x + 7 (+) x + 14$ or $45 \div 3 (= 15)$	B1	oe
	$3x + 21 = 45$ $x + 7 = 15$ or $15 - 7$	M1	oe
	8	A1	SC1 15 seen

6(a)	(length) = 7 seen or (width) = 8 seen or points plotted correctly	M1	
	their $(8 + 8 + 7 + 7)$	M1 dep	At least one length correct
	30	A1	SC2 for [25.5, 25.8] (perimeter of triangle) SC2 for [29.8, 30.2]
6(b)	their (8×7)	M1	from their diagram
	56	A1 ft	SC1 for 28 (area of triangle)

7(a)	Naples	B1	
7(b)	Cagliari	B1	
7(c)	Measurement of V to F [1.9, 2.1] and Measurement of V to N [5.9, 6.1]	B1	Note: If accurate V to F = 2 cm V to N = 6 cm
	Attempt to multiply by scale factor $260 \times$ their [5.9, 6.1] \div their [1.9, 2.1]	M1	eg their [5.9, 6.1] \div their [1.9, 2.1] or [2.8, 3.2] Note: If accurate 260×3
	[725, 835]	A1	780
	Alternative method		
	V to F (2 cm) and F to R (2.8 cm) and R to N (2.2 cm)	B1	V to F (2 cm) and F to N (4.8 cm) tolerances as above
	Attempt to multiply by scale factor $260 \times$ their [6.6, 7.3] \div their [1.9, 2.1]	M1	
	[817, 1000]	A1	910 or 884

8(a)	Sphere	B1	
8(b)	Cuboid Prism Cube	B2	B1 for 2 or 3 correct (and one incorrect) or B1 for 1 correct (and none incorrect)

9(a)	$5 \times 3 \times 2$	M1	oe
	30	A1	
9(b)	Correct net	B3	B2 for 5 correct joined faces B1 for 4 correct joined faces Must see inner lines, but scores B2 if otherwise correct
9(c)	5×3 or 5×2 or 2×3	M1	$5 \times 3 \times 2$ scores M0
	$(5 \times 3 + 5 \times 2 + 2 \times 3) \times 2$ or correct calculation for their net	M1 dep	for 5 or 6 faces
	62	A1 ft	ft on 5 or 6 faces eg on 5 correct faces (open net) (56 or 52 or 47)
	cm^2	B1	Units mark

10(a)	$8a$	B1	
10(b)	$5 \times 4 (-) 4 \times 25$ or $20 (-) 100$	M1	80 implies M1
	-80	A1	
10(c)	$4x - 28$	B1	
	$7x - 4x = -28 - 11$	M1	oe for collecting their terms
	-13	A1	

11(a)	$2\pi r$	B1	oe
11(b)	$2 \times 3.14 \times 3$	M1	Must be 3.14
	18.8(4)	A1	
11(c) (i)	their $18.8(4) \div 4 (= 4.7(1))$	M1	
	their $4.7(1) + 12$	M1 dep	oe their $18.8(4) \div 4 + 12$
	16.7(1)	A1 ft	$1.5\pi + 12$ oe
11(c) (ii)	90 or 60 seen	B1	May be on diagram
	$360 - 90 - 60 - 60$	M1	
	150	A1	

12(a)	Straight sloping line	B1	
12(b)	Valid coordinates	B1	eg (0, -1) (1, 1) (2, 3) (3, 5)
	Different valid coordinates	B1	
12(c)	$(2.8 + 1) \div 2$ or $2x = 3.8$	M1	
	1.9	A1	Embedded answer M1A0