



**General Certificate of Secondary Education  
November 2010**

**Mathematics**

**43055/1F**

**Foundation**

**Module 5 Paper 1**

**Final**

***Mark Scheme***

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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**The following abbreviations are used on the mark scheme:**

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

**MODULE 5 FOUNDATION TIER**

**43055/1F**

1a	24	B1	
1b	7	B1	
1c	18	B1	

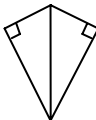
2a	Line drawn through <i>B</i> and parallel to <i>x</i> axis	B1	Minimum length 2 cm through <i>B</i> Need not be ruled
2b	Line drawn through <i>D</i> and parallel to <i>y</i> axis	B1	Minimum length 2 cm through <i>D</i> Need not be ruled
2ci	Point indicated at (4, 2)	B1	Need not be labelled but intention should be clear
2cii	Point plotted at (6, 1)	B1	Need not be labelled but intention should be clear

3a	Row 1 Rectangle 1st box ticked	B1	Accept crosses left blank
	Row 2 1st and 2nd boxes ticked	B1	
	Row 3 1st, 2nd and 4th boxes ticked	B1	
3b	(Regular) Octagon	B1	

4a	10	B1	
4b	Subtract 5	B1	oe
4c	$40 - 5n$	B1	
4di	30 and 0 (or -30, -60 etc)	B2	B1 for one correct (and one incorrect) Do not accept 60, 90 etc
4dii	No <b>and</b> valid reason	B1	eg 2nd sequence all even Not a multiple of 6 Not in 2nd sequence 6 does not go into 25, $\therefore$ cannot go into -25 Accept any implications that it is in 1st but not in 2nd sequence If unclear, assume comment refers to 2nd sequence

5ai	(Right) Cylinder	B1	Do not accept Prism
5aii	Cone	B1	
5b	6	B1	
5c	5	B1	
5d	3	B1	

6a	$\frac{2}{3}$ and valid mathematical reason	B1	eg not equal to $\frac{1}{2}$
6b	100% of 600 and valid mathematical reason	B1	eg not equal to 6
6c	$\sqrt{192}$ and valid mathematical reason	B1	eg not equal to a whole number
6d	Hexagon and valid mathematical reason	B1	eg not 4 sides 6 sides
6e	$x - 5 = 13$ and valid mathematical reason	B1	eg different answer Accept valid alternatives

7a	8 or 4 or 5 or 3 seen	M1	On diagram or in working $8 \pm 2$ mm 3, 4, $5 \pm 1$ mm eg $5 + 5 + 8$
	18	A1	Allow [17.6, 18.4]
7b	$\frac{1}{2} \times$ their $8 \times$ their 3	M1	oe
	12	A1 ft	
	cm <sup>2</sup>	B1	Units mark
7c	Clear diagram of a kite with symmetry diagonal drawn or If it resembles a square must see right angles marked or 3, 4 marked in the correct place	B1	

8a	6	B1	
8bi	<i>B</i>	B1	
8bii	<i>D</i>	B1	
8biii	<i>E</i>	B1	

9a	72	B1	
9b	125	B1	
9c	320	B1	
9d	360 – 80 or 280 seen	M1	$80 \div 2$
	their 280 $\div$ 2	M1 dep	180 – their 40
	140	A1	SC2 140 seen but 280 on answer line

10a	49	B1	If nothing in table, check working carefully
	8	B1	
	$x + 5$ Accept change of variable	B1	Do not accept +5 $x^2 - 10x + 33$
10b	16 + 12 + 5 or 16 + their 8 + 9	M1	$4^2 + 3 \times 4 + 5$
	33	A1 ft	

11a	$10w$	B1	
11b	4	B1	
11c	$3y + 6$ seen	M1	$y + 2 = \frac{30}{3}$ or 10
	$3y = 30 - 6$ or $3y = 24$	M1 dep	$y = 10 - 2$
	8	A1	

12a	Difference of two squares with a non-prime answer	B1	Note: Answer not required but if given must be correct eg $6^2 - 2^2 (= 32)$
	Always works if numbers used are not consecutive or numbers consecutive and do not add to a prime		
12b	Difference of two squares with a prime answer	B1	Note: Answer not required but if given must be correct eg $6^2 - 5^2 (= 11)$
	Only works if numbers are consecutive and add to a prime		

13a	14	B1	
13b	12	B1	
13ci	Straight line drawn from (1036, 50) to (1110, 50) <b>and</b> line drawn from (1110, 50) to (1150, 0)	B1	Need not be ruled between (1036, 50) to (1110, 50) $\pm \frac{1}{2}$ square tolerance Allow curve between 1110 and 1150
13cii	$50 \div 2 \times 3$ or $50 \div 40 (\times 60)$ or $25 \times 3$	M1	oe 1.25, $\frac{5}{4}$ Accept [0.66, 0.67] for $\frac{2}{3}$
	75	A1	SC1 for [73, 77]
13di	$30\,000 \times 1.10$ or $30\,000 \div 15$ or $\frac{1.10}{15}$	M1	oe
	$30\,000 \times 1.10 \div 15$	M1 dep	oe
	2200	A1	SC1 for the digits 22(000...)
13dii	Valid reason	B1	eg petrol price goes up Changes car Petrol consumption higher (worse)(more) Drives slower/faster

14a	$c$	B1	
14b	$d$	B1	
14c	$g$	B1	

15	$5x - 20$	M1	
	$5x - 3x = 20 + 7$ (= $2x$ ) (= 27)	M1	oe Collecting 4 terms
	13.5 or $\frac{27}{2}$	A1	oe