

For Edexcel

GCSE Mathematics

Unit 2 – Number, Algebra, Geometry 1
(Non-Calculator)

Higher Tier

Paper A

Marking Guide

Method marks (M) are awarded for knowing and using a correct method.

Accuracy marks (A) are awarded for correct answers, having used a correct method.

(B) marks are independent of method marks.

(C) marks are for communication.



Written by Shaun Armstrong

Only to be copied for use in the purchaser's school or college

Higher Tier Unit 2 Paper A Marking Guide

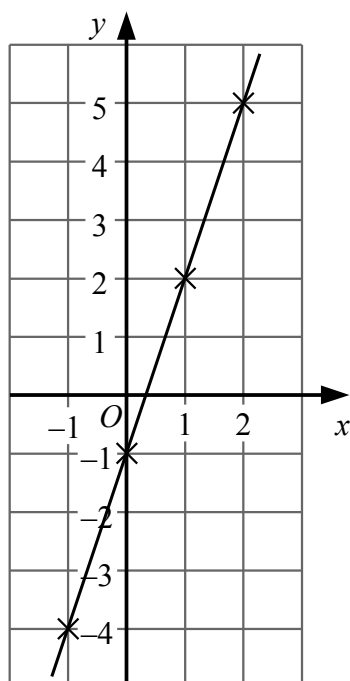
- 1** 1 gallon $\approx$ 4.5 litres
 80p per litre $\approx 4.5 \times 80\text{p}$ per gallon = £3.60 per gallon M1
 $2 \times 1.95 = \text{£}3.90$ M1
 Harry is wrong, the price did not more than double A1 Total 3

- 2** (a) $5p + 3q$ B2
 (b) m^7 B1
 (c) $3y^2(3x - 2y)$ M1 A1 Total 5

- 3** (a) B2

x	-1	0	1	2
y	-4	-1	2	5

- (b) B2



- (c) $y = 3x + 3$ B1 Total 5

- 4** angle $OPR = \text{angle } OQR = 90^\circ$
 angle $POQ = 360 - (90 + 90 + 53) = 127^\circ$ M1 A1 Total 2

5	(a)	$= (25 + 20) - 30 = 45 - 30 = \text{£}15$	M1 A1	
	(b)	$C = 30t$	B1	
	(c)	approx. $t = 2.5$	B1	
	(d)	if they think the job will take less than 2.5 hrs, Badri will be cheaper, if more than 2.5 hrs, Martin will be cheaper	B1	Total 5
*6	e.g.	if the card is $\frac{3}{10}$ mm thick,		
		total thickness $= 45 \times \frac{3}{10} = \frac{135}{10} = 13.5$ mm	M1 A1	
		14 mm is more than this so card must be thick enough	C1	Total 3
<i>[valid method involving calculation, clear determination of whether card is thick enough]</i>				
7	(a)	other angles in triangle $= \frac{1}{2}(180 - 32) = 74^\circ$	M1	
		$x = 360 - (2 \times 32 + 2 \times 74) = 360 - 212 = 148$	M1 A1	
	(b)	interior angle $= 180 - 2y$		
		exterior angle $= 180 - (180 - 2y) = 2y$	M1	
		no. of sides $= \frac{360}{2y} \quad [= \frac{180}{y}]$	M1 A1	Total 6
8	(a)	$= 9 \times 7 = 3 \times 3 \times 7$	M1 A1	
	* (b)	6.3 m = 630 cm		
		$630 = 10 \times 63 = 2 \times 3 \times 3 \times 5 \times 7$	M1	
		10 steps for Hisham, try more for Marlon:		
		11, 12, 13, 16, 17 not factors		
		$14 \times 3 \times 3 \times 5 = 14 \times 45$	M1	
		$15 \times 2 \times 3 \times 7 = 15 \times 42$	A1	
		$18 \times 5 \times 7 = 18 \times 35$, but step length is ≥ 40		
		try less for Marlon:		
		8 not factor		
		$9 \times 2 \times 5 \times 7 = 9 \times 70$	M1	
		$7 \times 2 \times 3 \times 3 \times 5 = 7 \times 90$, but step length ≤ 80		
		Marlon's step length can be 42, 45, (63), 70 cm	C2	Total 8
<i>[systematic trials / method reaching correct answers and showing there are no others]</i>				

9	(a) (i) (0, 6, 4)	B1	
	(ii) $B(5, 0, 8)$ $D(\frac{5+5}{2}, \frac{6+0}{2}, \frac{0+8}{2}) = (5, 3, 4)$	M1 A1	
	(b) area of XS = $(6 \times 4) + (\frac{1}{2} \times 3 \times 4) = 24 + 6 = 30$ volume = $30 \times 5 = 150 \text{ cm}^3$	M1 M1 A1	Total 6
10	(a) $= \frac{1}{\sqrt{4}} = \frac{1}{2}$	B1	
	(b) $= 27^{\frac{2}{3}} = (\sqrt[3]{27})^2 = 3^2 = 9$	M1 A1	Total 3
11	(a) $= \frac{4(x-1) + 2(x-3)}{(x-3)(x-1)}$	M1 A1	
	$= \frac{4x-4+2x-6}{(x-3)(x-1)} = \frac{6x-10}{(x-3)(x-1)}$	A1	
	(b) $= \frac{2(2x+3)}{(2x+3)(2x-3)} = \frac{2}{2x-3}$	M2 A1	Total 6
12	(a) area of quarter of square = $\frac{1}{2} \times 10 \times 10 = 50$	M1	
	area of square = $4 \times 50 = 200$	A1	
	area of octagon = $30 \times 30 - 200 = 900 - 200 = 700$	M1	
	area of section of path = $9 \times 700 + 4 \times 200$	M1	
	$= 6300 + 800 = 7100 \text{ cm}^2$	A1	
	(b) e.g. no. octagons in one row = $\frac{n}{3}$	M1	
	no. squares in one row = $\frac{n}{3} - 1$	M1	
	total no. of squares = $2(\frac{n}{3} - 1)$ [$= \frac{2}{3}n - 2$]	A1	Total 8

TOTAL FOR PAPER: 60 MARKS