

MARKING SCHEME

FORM II MATHEMATICS

END TERM 1

1.	$\frac{-8 \div 2 + 12 \times 9 - 4 \times 6}{56 \div 7 \times 2}$ $= \frac{-4 + 108 - 24}{8 \times 2}$ $= \frac{80}{16}$ $= 5$	<p>M1</p> <p>M1</p> <p>A1</p> <p>A3</p>
2.	<p>Distance = $56 \times \frac{5}{2}$</p> <p>= 140 KM</p>	<p>M1</p> <p>A1</p> <p>2</p>
3.	<p>$y = -\frac{3}{2}x$</p> <p>+ $\frac{1}{2}$ M= $-\frac{3}{2}$</p> <p>when $y = 0$, $3x = 1$, $x = \frac{1}{3}$</p> <p>$(\frac{1}{3}, 0)$</p> <p>when $x = 0$, $2y = 1$, $y = \frac{1}{2}$</p>	<p>M1</p> <p>A1</p> <p>A1</p> <p>3</p>
4.	<p>$0.1555 + 0.2809 \times 2 + 0.1175$</p> <p>= $0.1555 + 0.5618 + 0.1175$</p> <p>= 0.8348</p>	<p>M1</p>

	= 0.835	A1 2
5.	$(3^3)^{2/3} \times \frac{3^4}{2^4}^{-4}$ $= \frac{3^2 \times 3^{-1}}{2^{-1}} = \frac{3^{2+(-1)}}{2^{-1}}$ $= 3^1 \times 2^1$ $= 6$	M1 B1 A1 3
6.	$\text{Area} = \frac{1}{2} \times 7.5 \times \frac{9.2}{2} \times 2$ $= 34.5 \text{ cm}^2$	M1 A1 2
7.	<p>Let daughter's age be y yrs</p> <p>Fathers age is 3y yrs</p> $3y+12 = 2(y+ 12)$ $= 2y + 24$ $y = 24-12$ $= 12$ <p>Fathers age is $12 \times 3 = 36$ yrs</p>	M1 B1 A1 3

8.	No.	Log	
	37	1.5682	M1
	37 ²	1.5682	
		× 2	M1
	0.168	3.1364 +	
		$\bar{2}.2253$	
	75.63	1.3617	
		1.8787-	
		$\bar{1}.4830 \times \frac{1}{4}$	M1
	7.4268 x 10 ⁻¹	$\bar{1}.8708$	
	<u>0.74268</u>		
			M1
			A1
			4
9.	$D = \frac{M}{V}$		
	$V = \frac{63}{7000} = 0.009 \text{ m}^3 = 0.009 \times 100000$		M1
		$= 9000 \text{ cm}^3$	
	X – section area	$= 12 \times 15 - 12 \times 10$	M1
		$= 180 - 120$	
		$= 60 \text{ cm}^2$	
	Volume	$= \text{x – section area} \times \text{length}$	B1
	Length of pipe	$= \frac{9000}{60}$	
		$= 150 \text{ cm}$	
		$= 1.5 \text{ m}$	A1
			4

<p>10</p>	$y = \frac{2}{5}x + 5$ $M_1 = M_2 = \frac{-2}{5}$ $y = \frac{-2}{5}x + c = c = 5 - \frac{-2}{5}x - 2$ $= 4\frac{1}{5} \text{ or } \frac{21}{5}$ $y = \frac{-2}{5}x + \frac{21}{5} \text{ or } 5y + 2x = 21$	<p><i>M1</i></p> <p><i>M1</i></p> <p><i>B1</i></p> <p><i>A1</i></p> <p>4</p>
<p>11</p>	$2x + 3y = 1 \dots\dots\dots (i)$ $3x - 2y = 8 \dots\dots\dots (ii)$ $4x + 6y = 2 \dots\dots\dots (i) \times 2$ $+ \underline{9x - 6y = 24} \dots\dots\dots (ii) \times 3$ $13x = 26$ $x = \frac{26}{13} = 2$ <p>From equation (i)</p> $2 \times 2 + 3y = 1$ $3y = 1 - 4$ $y = \frac{-3}{3}$ $= -1$	<p><i>B1</i></p> <p><i>M1</i></p> <p><i>A1</i></p> <p><u><i>A1</i></u></p> <p>4</p>
<p>12</p>	$M. P \times \frac{90}{100} = 3150$ $M. P = \frac{3150 \times 100}{90}$	<p><i>M1</i></p>

	$= 3500/ =$	<u>A1</u> 2									
13	$3.\overline{71} = n = 3.717171 \dots\dots\dots$ $10^n = 37.1717\dots$ $100^n = 3717.1717\dots$ $10^{00n} - 10^n = 3717.1717 - 37.1717$ $990^n = 3680$ $n = \frac{3680}{990}$ $= \frac{368}{99}$ $= 3\frac{71}{99}$	M1 B1 <u>A1</u> 3									
14	<table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Days</th> <th>Huts</th> <th>People</th> </tr> </thead> <tbody> <tr> <td>30</td> <td>5</td> <td>7</td> </tr> <tr> <td>27</td> <td>9</td> <td>?</td> </tr> </tbody> </table> <p>No. of day decrease, workers increase in the ratio 30:27</p> <p>No. of huts increase, workers increase in the ratio 9:5</p> <p>People required = $\frac{30}{27} \times \frac{9}{5} \times 7$</p> <p>= 14</p>	Days	Huts	People	30	5	7	27	9	?	M1 B1 <u>A1</u> 3
Days	Huts	People									
30	5	7									
27	9	?									
15	$x + 5x = 180^\circ$ $6x = 180^\circ$ $x = 180^\circ$ 6	M1									

	<p>$= 30^\circ$ Angle of triangle at the center of polygon $180^\circ - 150^\circ = 30^\circ$ B1</p> <p>Number of sides = $\frac{360^\circ}{30^\circ}$ $= 12$ <u>A1</u> 3</p>
16	<div style="text-align: center;"> </div> <p style="text-align: right;">B2</p> <p>CN = 4.3 CM $\pm 1MM$ B1</p> <p>AB = 8 CM.</p> <p>Area of $\Delta ABC = \frac{1}{2} \times 8 \times 5$ $= 20 \text{ cm}^2$ <u>A1</u> 5</p>

17

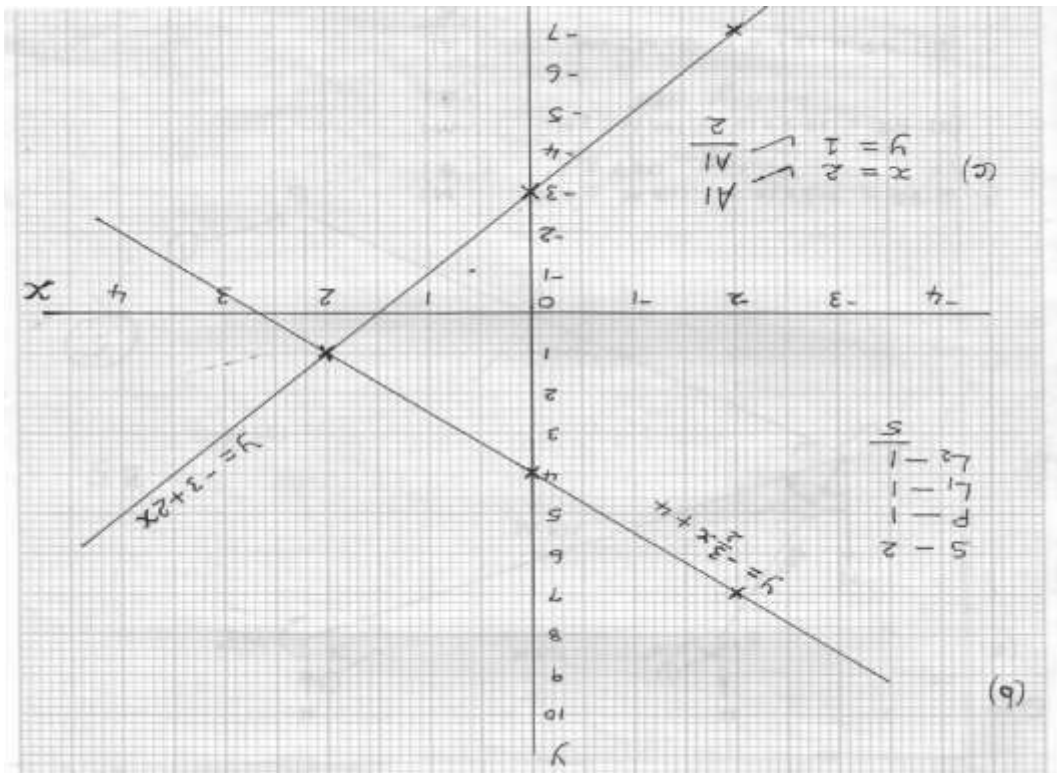
a. $y = -\frac{3}{4}x + 4$

x	-2	0	2
y	7	4	1

$y = -3 + 2x$

x	-2	0	2
y	-7	-3	1

All 4 - 3
 3 - 2
 2 - $\frac{1}{3}$
 3

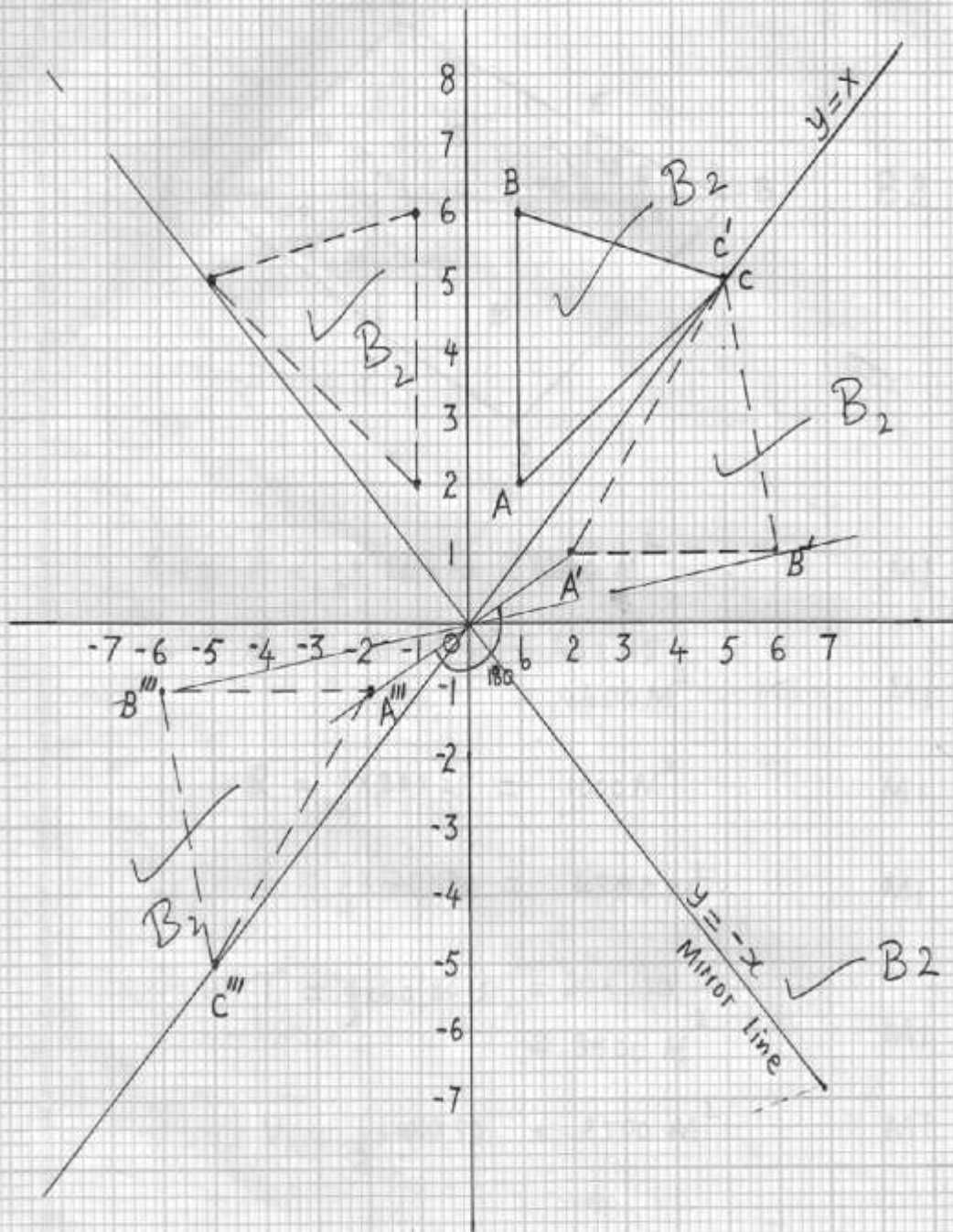


- | | | |
|----|---|----|
| 18 | Area of ceiling $(10 \times 7) = 70 \text{ m}^2$ | B2 |
| | Area of walls $(7 \times 4)2 = 56 \text{ m}^2$ | B2 |
| | Area of walls $(10 \times 4)2 = 80 \text{ m}^2$ | B2 |
| | Total surface area = $70 + 56 + 80 = 206 \text{ m}^2$ | B2 |

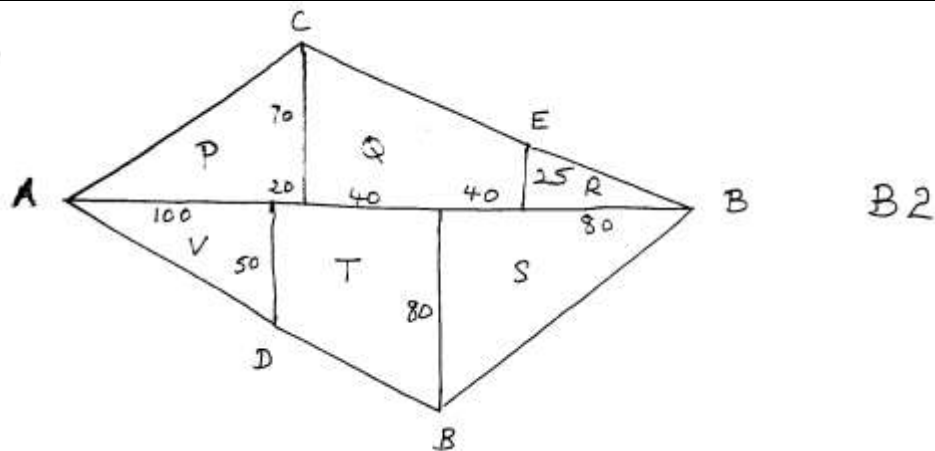
	Cost of painting = 206×200 = 41,200	M1 <u>A1</u> 10
19	<p>(a)</p> <p>(b) (i) $PR = 11.3 \times 10 = 113 \text{ M} \pm 1 \text{ M}$ bearings $067 \pm 1^\circ$</p> <p>(ii) $PR = 11.3 \times 10 = 113 \text{ M} \pm 1 \text{ M}$ Bearings $067 \pm 1^\circ$</p> <p>(iii) $SR = 10.5 \times 10 = 105 \text{ M} \pm 1 \text{ M}$ Bearings 180°</p>	M1 B1 M1 <u>A1</u> 5

20

Q20



21



Area $P = \frac{1}{2} \times 120 \times 70 = 4200 \text{ m}^2$
 $Q = \frac{1}{2} \times 80 (75+40) = 40 \times 115$
 4600 m^2

M1

M1

$R = \frac{1}{2} \times 80 \times 25 = 1000 \text{ m}^2$

M1

$S = \frac{1}{2} \times 120 \times 80 = 4800 \text{ m}^2$

M1

$T = \frac{1}{2} \times 60 (80 + 50) = 30 \times 130$
 3900 m^2

M1

$V = \frac{1}{2} \times 100 \times 50 = 2500 \text{ m}^2$

M1

Total Area = $4200 + 4600 + 1000 + 4800 + 3900 + 2500 = 21\ 000 \text{ m}^2$

A1

$$\begin{array}{r} 21000 \\ = 10000 \end{array}$$

= 2.1 ha

A1

10