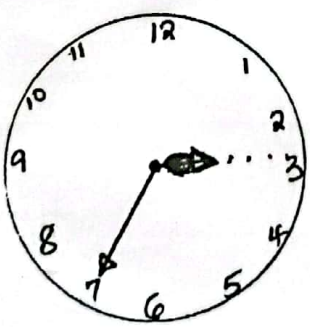


**MUKONO DISTRICT EXAMINATIONS BOARD 2024.**  
**P.7 MOCK EXAMINATIONS MATHEMATICS MARKING GUIDE**

No	SOLUTION	AWARD	COMMENT
1.	$\begin{array}{r} 96 \\ -32 \\ \hline 64 \end{array}$	B <sub>2</sub>	For 64
2.	2024 = Two thousand twenty-four	B <sub>2</sub>	For CAO
3	$\begin{aligned} 9^0 + 10^0 - y^0 \\ = (1+1) - 1 \\ = 2 - 1 \\ = 1 \end{aligned}$	M <sub>1</sub> A <sub>1</sub>	for correct working for 1
4.	$K = \{r, a, t\}$ Subsets of set K are; $\{ \}, \{r\}, \{a\}, \{t\},$ $\{r, a\}, \{r, t\}, \{a, t\},$ $\{r, a, t\}$ The missing subsets are; $\{r, t\}, \{t\}$	B <sub>1</sub>  B <sub>1</sub>	for $\{r, t\}$ for $\{r\}$
5	2, 3, 5, 7, <u>11</u> (Prime number)	B <sub>2</sub>	For 11
6.	$\begin{aligned} -7 - (-3) &= -7 + 3 \\ -7 - -3 &= -4 \end{aligned}$	M <sub>1</sub> A <sub>1</sub>	for simplifying the integers for -4
7.		B <sub>2</sub>	For the correct showing of the hands. Reject the hand at hour hand at exactly 3.

8.  $\frac{\text{Sum of data}}{\text{No of data}} = \text{Mean}$

$$\frac{4+5+0+x+7}{5} = 5$$

$$\frac{x+16}{5} = 5$$

$$\left(\frac{x+16}{5}\right)^5 = 5 \times 5$$

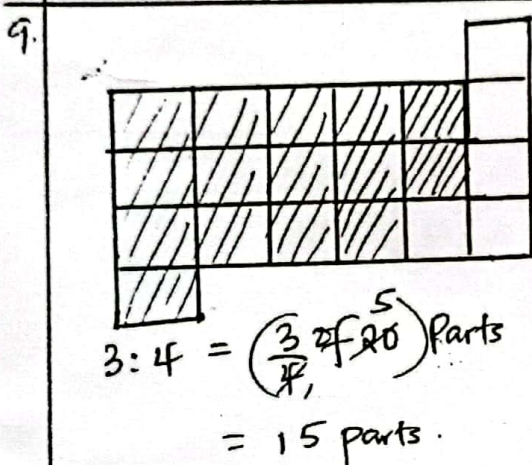
$$x+16 = 25$$

$$x+16-16 = 25-16$$

$$x = 9$$

M<sub>1</sub> For correct working

A<sub>1</sub> For correct answer only



B<sub>1</sub> For correct working.

B<sub>1</sub> For shading.

10. Let Babinye's age be  $h$  years

Achieng's age	Babinye's age	Total age
$(h+18) \text{ years}$	$h \text{ years}$	$48 \text{ years}$

$$h+18+h = 48$$

$$h+h+18 = 48$$

$$2h+18-18 = 48-18$$

$$2h = 30$$

$$\frac{2h}{2} = \frac{30}{2}$$

$$h = 15$$

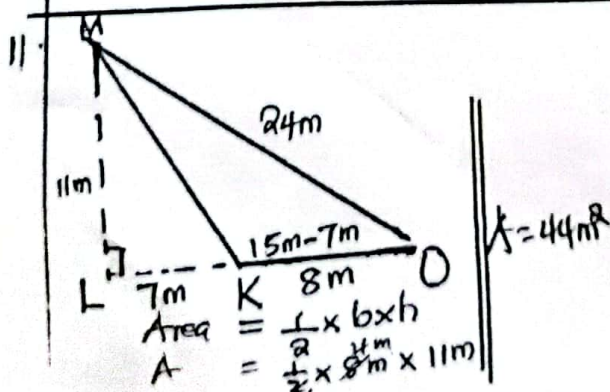
Achieng's age  
 $= (h+18) \text{ yrs}$   
 $= (15+18) \text{ yrs}$   
 $= 33 \text{ years}$

M<sub>1</sub>

For correct formation of the eqn.

A<sub>1</sub>

For 33 years



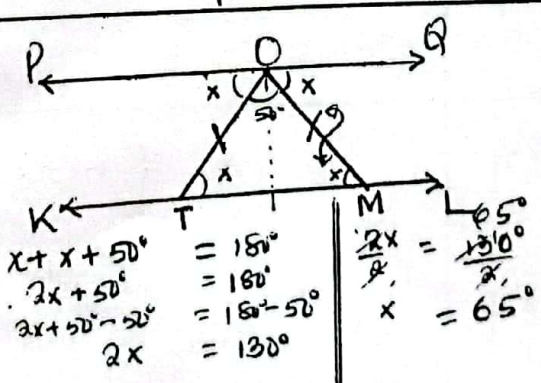
M<sub>1</sub>

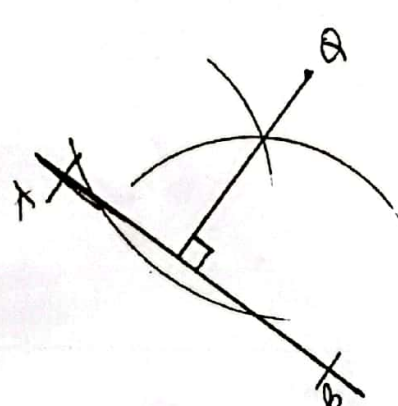
For correct substitution.

A<sub>1</sub>

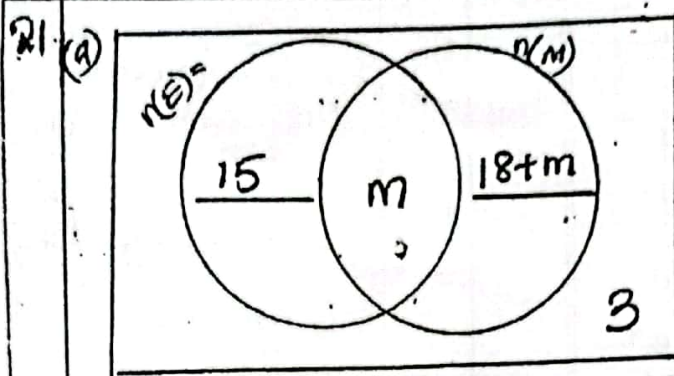
For correct answer only  
 Reject wrong units.



12.	<p>Product of the numbers = Product of the LCM and GCF</p> <p>1<sup>st</sup> no. <math>\times</math> 2<sup>nd</sup> no. = <math>120 \times 10</math></p> <p>1<sup>st</sup> no. <math>\times</math> 40 = <math>120 \times 10</math></p> <p><math>\frac{1^{st} \text{ no.} \times 40}{40} = \frac{120 \times 10}{40}</math></p> <p>Other no. = 30</p>	<p>M<sub>1</sub></p> <p>For correct marking</p> <p>For correct answer only (30)</p> <p>Method 2</p> <p>Other no. = <math>\frac{\text{GCF} \times \text{LCM}}{\text{Given no.}}</math> M<sub>1</sub></p> <p>Other no. = <math>\frac{120 \times 10}{40}</math></p> <p>Other no. = 30 ✓ A<sub>1</sub></p>
13	<p><math>b = ak</math></p> <p><math>b = a \times k</math></p> <p><math>b = -3x - 4</math></p> <p><math>b = 12</math></p> <p><math>b(2a - k)</math></p> <p><math>= 12[(2x - 3) - (-4)]</math></p> <p><math>= 12(-6 + 4)</math></p> <p><math>= 12 \times -2</math></p> <p><math>= -24</math></p>	<p>M<sub>1</sub></p> <p>For correct substitution</p> <p>A<sub>1</sub></p> <p>For -24</p>
14.	<p><math>2 \times \pi \times r = C</math></p> <p><math>2 \times \frac{22}{7} r = 88 \text{ dm}</math></p> <p><math>\frac{44r}{7} = 88 \text{ dm}</math></p> <p><math>\frac{44r}{7} \times \frac{7}{44} = \frac{88 \text{ dm} \times 7}{44}</math></p> <p><math>r = 14 \text{ dm}</math></p>	<p>M<sub>1</sub></p> <p>For correct substitution into the formula</p> <p>A<sub>1</sub></p> <p>For <math>r = 14 \text{ dm}</math></p> <p>(Reject wrong units)</p>
15	 <p> <math>x + x + 50^\circ = 180^\circ</math>  <math>2x + 50^\circ = 180^\circ</math>  <math>2x + 50^\circ - 50^\circ = 180^\circ - 50^\circ</math>  <math>2x = 130^\circ</math> </p> <p> <math>\frac{2x}{2} = \frac{130^\circ}{2}</math>  <math>x = 65^\circ</math> </p>	<p>M<sub>1</sub></p> <p>For correct formation of the eqn.</p> <p>For <math>65^\circ</math>.</p>

16.	<p>GIRLS DATA</p> <p>Sprintake 8 hours</p> <p>1 girl takes <math>(5 \times 8)</math> hours</p> <p>1 girl takes 40 hours</p> <p>2 girls take <math>\frac{40}{2}</math> hours</p> <p>2 girls take 20 hours.</p>	<p><math>M_1</math></p> <p>For correct working</p> <p><math>A_1</math></p> <p>For CAO</p>								
17.	<p>2 picture tomatoes rep. 8 tomatoes</p> <p>1 picture tomato rep. <math>\frac{4}{2}</math> tomatoes</p> <p>5 picture tomatoes rep. <math>(4 \times 5)</math> tomatoes</p> <p>5 picture tomatoes rep. 20 tomatoes</p>	<p><math>M_1</math></p> <p>For correct working</p> <p><math>A_1</math></p> <p>For 20 tomatoes</p>								
18.		<p><math>B_1</math></p> <p><math>P_1</math></p> <p><math>B_1</math> for the arcs</p> <p><math>P_1</math> for the perpendicular line</p>								
19.	<p><math>3^2 \times 3^2 = 27</math></p> <p><math>(y+2) = 3</math></p> <p><math>y+2 = 3</math></p> <p><math>y+2-2 = 3-2</math></p> <p><math>y = 1</math></p>	<table border="1" data-bbox="699 1364 828 1677"> <tr><td>3</td><td>27</td></tr> <tr><td>3</td><td>9</td></tr> <tr><td>3</td><td>3</td></tr> <tr><td></td><td>1</td></tr> </table> <p><math>M_1</math></p> <p>For correct working</p> <p><math>A_1</math></p> <p>For 1</p>	3	27	3	9	3	3		1
3	27									
3	9									
3	3									
	1									

# SECTION B (60 MARKS)



B1  
B1

For Completing  
the venn diagram  
correctly.

21 (b)  $m + 18 + 15 = 40$   
 $m + 33 = 40$   
 $m + 33 - 33 = 40 - 33$   
 $m = 7$

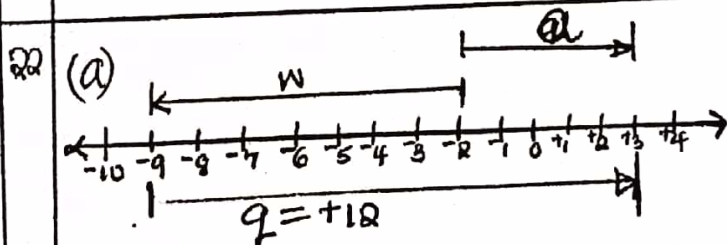
M1  
A1

For the formation  
of the correct eqn  
for  $m = 7$

21 (c) Prob. =  $\frac{n(E)}{n(S)}$  | Prob. =  $\frac{32}{50}$   
 Prob. =  $\frac{m + m + 8}{40 + m + 3}$  | Prob. =  $\frac{32}{50}$   
 Prob. =  $\frac{7 + 7 + 18}{40 + 7 + 3}$

B1  
B1

For the 32  
For  $n(E) = 50$



$W = -7$

$Q = +5$

B1  
B1  
B1

for -7  
for +5  
for the arrow  
q

22 (c)  $q = +12$   
 let the additive inverse be h.  
 $+5 + h = 0$  |  $+12 + h = 0$   
 $+5 - 5 + h = 0 - 5$  |  $+12 - 12 + h = 0 - 12$   
 ~~$h = -5$~~  |  $h = -12$

B1

for the  
additive inverse



23.

1st no	2nd no	3rd no	4th no	TOTAL
m	m+4	m+8	m+12	104

$$m + m + 4 + m + 8 + m + 12 = 104$$

$$m + m + m + m + 4 + 8 + 12 = 104$$

$$4m + 24 = 104$$

$$4m + 24 - 24 = 104 - 24$$

$$4m = 80$$

$$\frac{4m}{4} = \frac{80}{4}$$

$$m = 20$$

The numbers are;

$$m, m+4, m+8, m+12$$

$$= 20, 20+4, 20+8, 20+12$$

$$= 20, 24, 28, 32$$

$$\frac{104}{4}$$

$$= 26$$

$$80$$

M<sub>1</sub>

For the formation  
of the correct eqn

M<sub>1</sub>

For collecting like  
terms

A<sub>1</sub>

For the value  
of m

B<sub>1</sub>

For the numbers

24.

$$\text{Miranda} = \frac{1}{3}$$

$$\text{Rem} = 1 - \frac{1}{3}$$

$$= \frac{2}{3}$$

$$\text{Pepsi} = \frac{1}{3} \times \frac{1}{2}$$

$$= \frac{1}{6}$$

$$\text{Coca Cola} = \frac{2}{3} - \frac{1}{6}$$

$$= \frac{(2 \times 2) - (1 \times 1)}{6}$$

$$= \frac{4-1}{6}$$

$$= \frac{3}{6}$$

$$\text{Coca Cola} = \frac{1}{2}$$

LCD

$$\frac{2}{3} \times \frac{1}{2} = \frac{2 \times 1}{3 \times 2} = \frac{2}{6}$$

$$= 3 \times 2 = 6$$

B<sub>1</sub>

for Pepsi ( $\frac{1}{6}$ )

B<sub>1</sub>

for Coca Cola ( $\frac{1}{2}$ )

TOTAL NO OF SPECTATORS

$$= (30 \div \frac{1}{2}) \text{ Spectators}$$

$$= (30 \times 2) \text{ Spectators}$$

$$= 60 \text{ Spectators}$$

M<sub>1</sub>

for correct working

M<sub>1</sub>

for correct working

A<sub>1</sub>

for 60 spectators

$$\begin{aligned}
 \text{Length} &= \text{Length} \\
 5x &= 3x + 8 \\
 5x - 3x &= 3x - 3x + 8 \\
 2x &= 8 \\
 \frac{2x}{2} &= \frac{8}{2} \\
 x &= 4
 \end{aligned}$$

M/ For the formation of the eqn.

A/ For  $x=4$

$$\begin{aligned}
 \text{(b) Actual Length} &= 5x \text{ cm} \\
 &= 5(4) \text{ cm} \\
 l &= 20 \text{ cm} \\
 \text{Area} &= l \times w \\
 A &= 20 \text{ cm} \times 5 \text{ cm} \\
 A &= 100 \text{ cm}^2
 \end{aligned}$$

B/ for actual length

B/ for area =  $100 \text{ cm}^2$

$$\begin{aligned}
 \text{(c) Perimeter} &= 2(l+w) \\
 P &= 2(20 \text{ cm} + 5 \text{ cm}) \\
 P &= 2 \times 25 \text{ cm} \\
 P &= 50 \text{ cm}
 \end{aligned}$$

Reject wrong units

B/ for Perimeter =  $50 \text{ cm}$

$$\begin{aligned}
 \text{Magical Sum} &= (31+21)+(11+1) \\
 &= 52+12 \\
 &= 64
 \end{aligned}$$

$$\begin{aligned}
 y+7+9+31 &= 64 \\
 y+47 &= 64 \\
 y+47-47 &= 64-47 \\
 y &= 17
 \end{aligned}$$

$$\begin{aligned}
 K+5+11+29 &= 64 \\
 K+35 &= 64 \\
 K+35-35 &= 64-35 \\
 K &= 29
 \end{aligned}$$

$$\begin{aligned}
 m+7+29+1 &= 64 \\
 m+37 &= 64 \\
 m+37-37 &= 64-37 \\
 m &= 27
 \end{aligned}$$

$$n+25+23+1=64$$

$$n+49-49=64-49$$

$$n=15$$

$$P+31+5+25=64$$

$$P+61=64$$

$$P+61-61=64-61$$

$$P=3$$

B/ for  $K=29$

B/ for  $y=17$

B/ for  $n=15$

B/ for  $m=27$

B/ for  $P=3$

27(a) 250 US dollars to Ugsh (FBM)

$$= 250 \times \text{Ugsh } 3800$$

$$= \text{Ugsh } 38000$$

$$\begin{array}{r} \text{Ugsh } 38000 \\ \times \quad 25 \\ \hline \end{array}$$

$$\text{Ugsh } 190000$$

$$+ \quad 760000$$

$$\text{Ugsh } 950000$$

M

For correct working

A

For CAO

27(b) Ugsh 2,078,400 to Pound sterling (USD)

$$= \left( \frac{\text{Ugsh } 2078400}{\text{Ugsh } 4800} \right) \text{ Pound Sterling}$$

$$= \left( \frac{\text{Ugsh } 2078400}{\text{Ugsh } 48} \right) \text{ Pound Sterling}$$

$$= 433 \text{ Pound Sterling.}$$

M

For correct working

A

For the correct answer only

1000ksh to Ugsh (FBM)

$$= 1000 \times \text{Ugsh } 35$$

$$= \text{Ugsh } 50,000$$

Ugsh 50,000 to US dollars (USD)

$$= \left( \frac{\text{Ugsh } 50000}{\text{Ugsh } 3500} \right) \text{ US dollars}$$

$$= 14 \text{ US dollars.}$$

B

For Ugsh 50,000

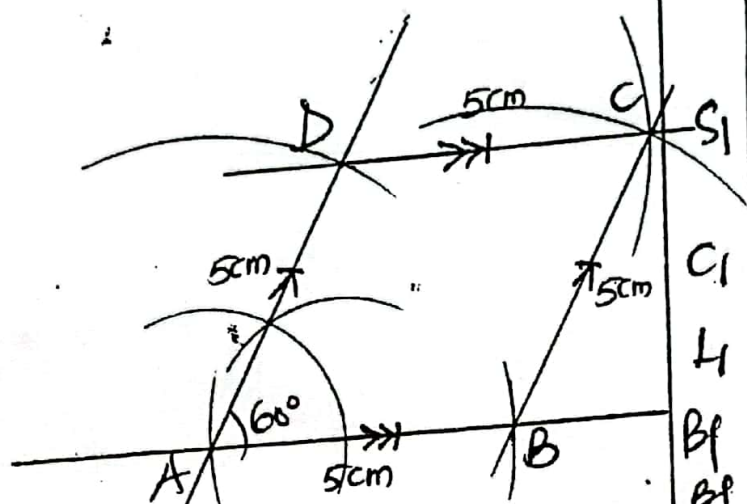
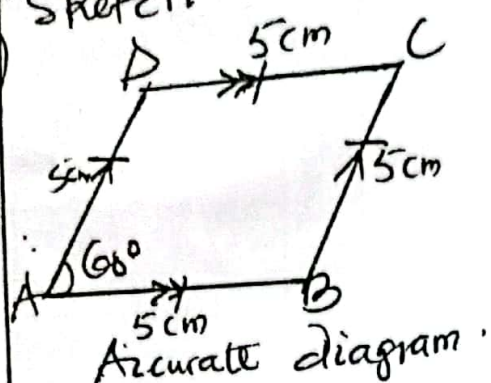
B

for 14 US dollars



<p>18) <u>Ne of small boxes</u></p> <p>(1) <math>= \frac{L}{s} \times \frac{W}{s} \times \frac{H}{s}</math></p> <p><math>= \left( \frac{20\text{cm}}{2\text{cm}} \times \frac{19\text{cm}}{2\text{cm}} \times \frac{21\text{cm}}{2\text{cm}} \right)</math> Small boxes</p> <p><math>= \left( \frac{10}{2\text{cm}} \times \frac{9\text{cm}}{2\text{cm}} \times \frac{10\text{cm}}{2\text{cm}} \right)</math> Small boxes</p> <p><math>= (10 \times 9 \times 10)</math> small boxes</p> <p><math>= 900</math> small boxes</p>	<p>Follow through</p> <p>M/ For correct working</p> <p>A/ For 900 small boxes.</p>
<p>18) <u>Vol of the box (B)</u></p> <p>Vol = B.a x h</p> <p>Vol = (L x W) x h</p> <p>Vol = (20cm x 19cm) x 21cm</p> <p>Vol = <math>\frac{380\text{ cm}^2}{\times 21\text{ cm}}</math></p> <p><math>\begin{array}{r} 0380\text{ cm}^3 \\ + 7600 \\ \hline 7980\text{ cm}^3 \end{array}</math></p> <p><u>Vol of the small boxes (type A)</u></p> <p>Vol = Base area x s x 900</p> <p>Vol = <math>2 \times 2 \times 2 \times 900</math></p> <p>Vol = <math>2\text{cm} \times 2\text{cm} \times 2\text{cm} \times 900</math></p> <p>Vol = <math>8\text{ cm}^3 \times 900</math></p> <p>Vol = <math>7200\text{ cm}^3</math></p> <p><u>Vol of the empty space</u></p> <p><math>= \begin{array}{r} 7980\text{ cm}^3 \\ - 7200\text{ cm}^3 \\ \hline 780\text{ cm}^3 \end{array}</math></p>	<p>B/ for the vol of the box (B)</p> <p>B/ For the vol. of the small boxes of type (A)</p> <p>B/ for the volume of the empty space</p>

29. Sketch  
(a)



for the correct  
complete sketch  
only  
for  $60^\circ$   
for length AB  
for diagonal AC  
for  $\angle ABC$ .

(b) (i) Diagonal AC = 8.5cm / 8.6cm / 8.7cm  
(ii)  $\angle ABC = 119^\circ / 120^\circ / 121^\circ$

30.

x	-5	-3	0	+2
y	-1	1	+4	6

$$x = y - 4$$

$$x = 1 - 4$$

$$x = -3$$

$$y - 4 = x$$

$$y - 4 = 0$$

$$y - 4 + 4 = 0 + 4$$

$$y = +4$$

$$x = y - 4$$

$$x = 0 - 4$$

$$x = -4$$

B<sub>1</sub>

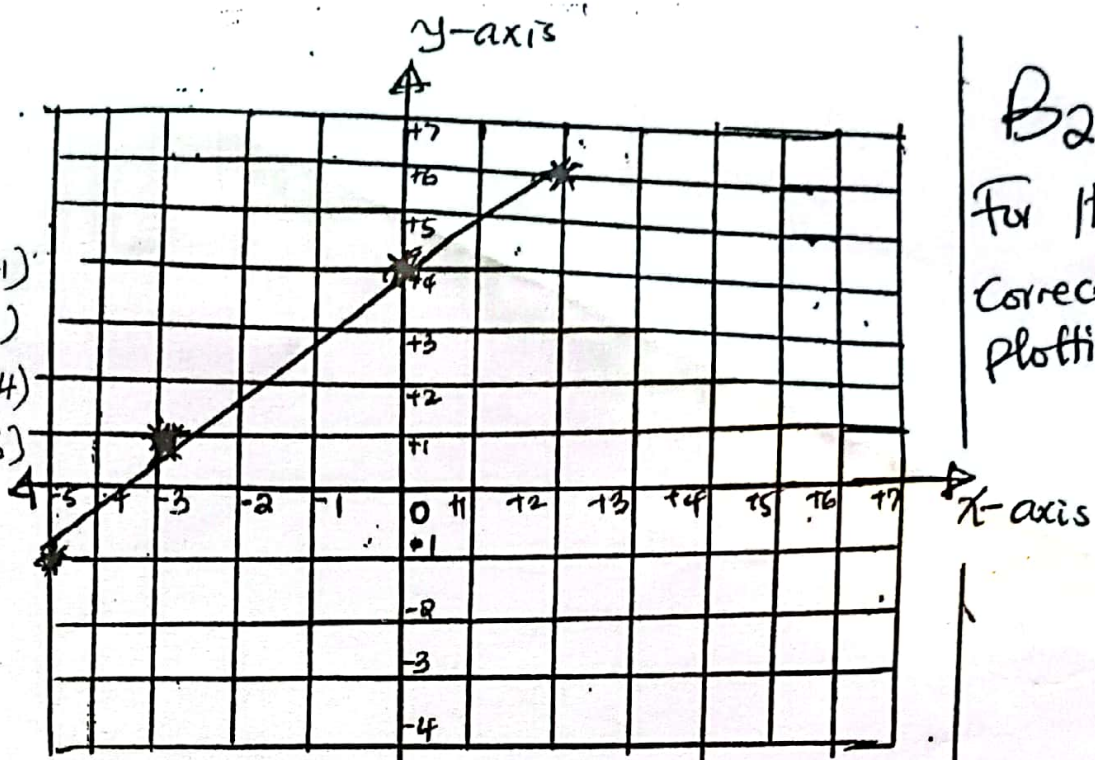
B<sub>1</sub>

B<sub>1</sub>



30  
(b)

$(-5, -1)$   
 $(-3, 1)$   
 $(0, 4)$   
 $(2, 6)$



B2  
For the  
correct  
plotting

31 (a)  $1800 \text{ hours} = 18 \text{ min}$   
 $18 \text{ } 00 \text{ h.}$   
 $- 12 \text{ } 00$   


---

 $6:00 \text{ P.m.}$

Bf

for 6:00 pm  
Reject  
without  
dots.  
with a.m.  
Reject  
0600 P.m.

31 (b) Distance =  $270 \text{ km} - 120 \text{ km}$   
 $= 150 \text{ km}$

Bf

for  
CAO

31 (c) Dep. - Arrival

$11 \text{ } 20$   
 $- 11 \text{ } 00$   


---

 $0 \text{ } 20$

Dur = 20 minutes

Bf

for  
20  
minutes

31 (d)

$$\text{Average Speed} = \frac{TDC}{TTT}$$

$$\text{Average Speed} = \frac{270 \text{ km}}{10 \text{ h}}$$

$$= \frac{27 \text{ km}}{1 \text{ h}}$$

$$\text{Average Speed} = 27 \text{ km/h}$$

M/ For the correct working

A/ For CAO

$$\begin{array}{r} 1101 \text{ two} \\ + 11 \text{ two} \\ \hline 1000 \text{ two} \end{array}$$

$$\begin{array}{l} 1+1 = 2 \\ 2 \div 2 = 1 \text{ rem } 0 \\ 1+0+1 = 2 \\ 2 \div 2 = 1 \text{ rem } 0 \\ 1+1 = 2 \\ 2 \div 2 = 1 \text{ rem } 0 \end{array}$$

M/ For correct working

A/ For the final answer

32 (b)  $y^2 y \text{ ones}$   
 $102_y = 27$

$$(1 \times y^2) + (0 \times y) + (2 \times 1) = 27$$

$$y^2 + 0 + 2 = 27$$

$$y^2 + 2 - 2 = 27 - 2$$

$$y^2 = 25$$

$$\sqrt{y^2} = \sqrt{25}$$

$$\sqrt{y \times y} = \sqrt{5 \times 5}$$

$$y = 5$$

M/ For the formation of the eqn.

M/ for final collection of like terms

A/ For  $y = 5$

Reject 1000 without the base