WAKISO DISTRICT JOINT EXAMINATIONS BOARD
(WAKISO MAIN, KIRA, MAKINDYE AND NANSANA MUNICIPALITY)
PRIMARY SEVEN INTERNAL ASSESSMENT
2023
MATHEMATICS
Time Allowed: 2 hours 30 minutes

Index No.

Random No.						Personal No.		

Candidate's Name: ....

Candidate's signature: .... *Marking guide* ....

School Name: ....

District/Municipality: ....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO
Read the following Instructions Carefully:
1. This paper has two sections A and B.
2. Section A has 20 questions (40 marks).
3. Section B has 12 questions (60 marks).
4. Answer all questions. All the working for both sections A and B must be shown in spaces provided.
5. All working must be done using a blue or black ball point pen or ink. Any work done in pencil other than graphs and diagrams will not be marked.
6. No calculators are allowed in the examination room.
7. Unnecessary changes and crossings in your work and handwriting that cannot easily be read may lead to loss of marks.
8. Do not write anything in the boxes indicated "For examiners' use only"

ORGANISED AND PUBLISHED BY: **W.A.D.E.B**
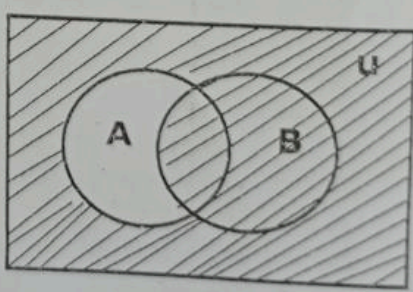© 2023 WA.D.E.B

SECTION A (40 MARKS)
Answer all questions in this section.

1. Add: 3.7 + 2.3

$$
\begin{array}{r}
\overset{①}{3}\cdot 7 \\
+\ 2\cdot 3 \\
\hline
6\cdot 0 \\
\hline
\end{array}
$$

2. Write **49** as a Roman Numeral.

40 + 9

XL IX

XLIX

49 → XLIX

3. Subtract: $\dfrac{1}{2} - \dfrac{1}{4}$

$\dfrac{1}{2} - \dfrac{1}{4}$

$\left(\dfrac{1}{2}\times 8\right) - \left(\dfrac{1}{4}\times 8\right)$

$\dfrac{}{8}$

$\dfrac{4-2}{8}$

$\dfrac{2}{8}$

$\dfrac{8}{84}$

$\dfrac{1}{4}$

4. Find the next numbers in the sequence.

1, 3, 6, 10, 15, __21__ , __28__

+2 +3 +4 +5 +6 +7

5. Write eighty four thousand forty eight in figures.

Eighty-four thousand → 84000

forty-eight → + 48

$$
\begin{array}{r}
84000 \\
+\quad 48 \\
\hline
84,048 \\
\hline
\end{array}
$$

6. Describe the shaded region in the Venn diagram below.

(A−B)'

7.	Factorize completely: 4ap − 2a	8.	Simplify: -9 − ⁺4 =

7.

$2 \times a (2p - 1)$

$2a (2p - 1)$

2	4ap	−	2a
a	$\frac{2}{ap}$	−	a
	2p	−	1

8.

$-9 - (^+4)$

$-9 - 4$

-13

$-x+ = -$

+ves	−ves
− −	−
− −	−
−	
−	

---

9. Show twenty minutes to three o'clock on the face shown.

Hrs	min
$\overset{2}{3}$: $\overset{60}{00}$	
− 0 : 20	
2 : 40	

10. Given that **a=2, b= ¯4**. Find the value of **3a − b**.

$(3 \times a) - (b)$

$(3 \times 2) - (-4)$

$6 + 4$

10

$- x - = +$

---

11. If today is Thursday, what day of the week will it be 102 days from now?

Mon	Tue	Wed	Thur	Fri	Sat	Sun
1	2	3	4 ↓	5	6	0

$4 + 102 = \underline{\quad}$ (mod 7)

$106 = \underline{\quad}$ (mod 7)

$106 \div 7 = \bullet$ 15 rem 1

$106 = 1$ (mod 7)

$4 + 102 = 1$ (mod 7)

It will be Monday.

12. Find the size of the angle marked **P** in the figure below.
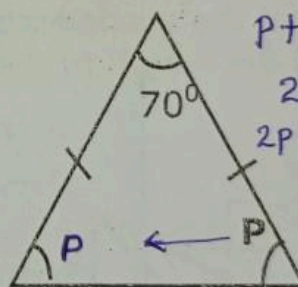
$P + P + 70° = 160°$

$2p + 70° = 180°$

$2p + 70° - 70° = 180° - 70°$

$2p = 110°$

$\frac{2p}{2} = \frac{110°}{2}$

$P = 55°$

---

13. Round off **246.8** to the nearest whole number.

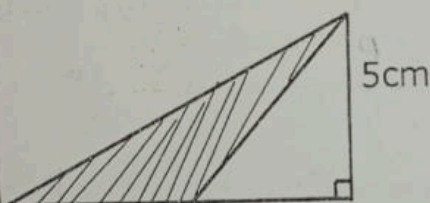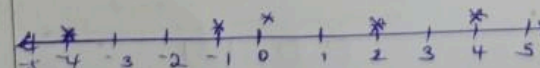| Whole number	//	Decimal fraction
246	•	8

$\begin{array}{r} 246 \\ + \quad 1 \\ \hline 247 \end{array}$

$246.8 \curvearrowright 247$

14. Subtract: $1010_{two} - 111_{two}$

$\begin{array}{r} \cancel{1}\ \overset{2}{\cancel{0}}\ \overset{(2)}{\cancel{1}}\ \overset{(2)}{0}\ {}_{two} \\ -\quad 1\ \ 1\ \ 1\ {}_{two} \\ \hline 0\ 0\ 1\ 1\ {}_{two} \end{array}$

---

15. When $\frac{1}{9}$ of the pupils in a class are absent, 32 pupils are present. Find the number of pupils in the class.

Fraction of pupils present.

$1 - \frac{1}{9}$

$\frac{9-1}{9}$

$\frac{8}{9}$

8 parts $\rightarrow 32$ pupils

1 part $\rightarrow \frac{32^4}{8_1}$ pupils

1 part $\rightarrow 4$ pupils

9 parts $\rightarrow 9 \times 4$ pupils

$\rightarrow 36$ pupils

36 pupils are in class.

16. A school bursar deposited a bundle of twenty thousand shilling notes numbered from **BR2854600** to **BR2854799** consecutively. How much money did the bursar deposit?

Number of notes.

$(LR - FR) + 1$

$\quad BR\ 2854799$
$- BR\ 2854600$
$\overline{\quad\ \ 0000199}$ $+1$

$199 + 1$

200 notes

Amount of money.

1 note $\rightarrow$ sh. 20,000

200 notes $\rightarrow$ sh. 20,000 × 200

$\rightarrow$ sh. 4,000,000

The bursar deposited sh. 4,000,000

17. Express 750 millilitres to litres.

$1000\ ml = 1\ litre$

$1\ ml = \frac{1}{1000}\ litre$

$750\ ml = \left(\frac{1}{1000} \times 750\right)\ litres$

$750\ ml = \left(\frac{1}{1000} \times 750\right)\ litres$

$= 0.75\ litres.$

18. The area of the shaded triangle is 20cm². If the height of the triangle is 5cm, find the length of the base of the shaded triangle.

5cm

$\frac{1}{2} \times b \times h = Area$

$\frac{1}{2} \times b \times 5cm = 20cm^2$

$2 \times \frac{b \times 5cm}{2} = 20cm^2 \times 2$

$\frac{b \times 5cm}{5cm} = \frac{40cm \times cm}{5cm}$

$b = 8cm$

The length of the base is 8cm.

19. Find the median of the following integers.
4, -1, 2, 0, -4

$(-4), (-1), 0, (2), (4)$

Median $= 0$

20. Simplify: $3^2 \times 3^5$

$= 3^2 \times 3^5$

$= 3^{2+5}$

$= 3^7$

$= 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3$

$= 2,187$

SECTION B (60 MARKS)

21. The venn diagram below shows the number of farmers who grow different crops in a community farm.

Cassava / Rice

X   X+4   (5X-1)

7
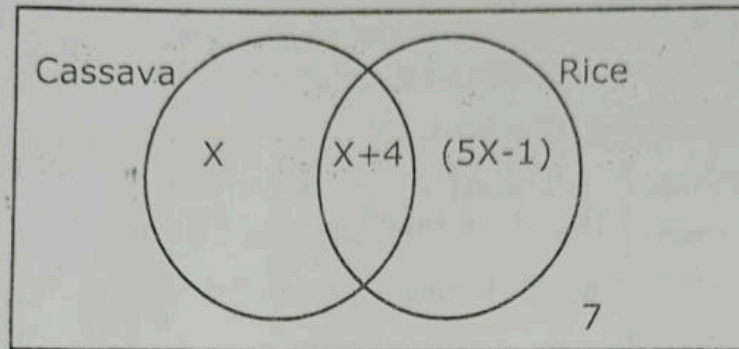
(a) If 24 farmers grow cassava, find the value of **X**.

$$X + x + 4 = 24$$
$$2x + 4 = 24$$
$$2x + 4 - 4 = 24 - 4$$
$$2x = 20$$
$$\frac{2x}{2} = \frac{20}{2}^{10}$$

$X = 10$

(3mrks)

(b) How many farmers grow only one crop?

Cassava only + Rice only

$(x + 5x - 1)$ farmers.

$10 + (5 \times 10) - 1$ farmers

$10 + 50 - 1$ farmers

$60 - 1$ farmers.

59 farmers

(2mks)

22. Mukasa has two children, Kigongo and Kityo. If Kigongo is half his age, Kityo is a third his age and the total age of the two children is 30 years.

(a) How old is Mukasa?

let Mukasa's age be k

Kigongo	Kityo	total
$\frac{1}{2}k$	$\frac{1}{3}k$	30 yrs

$$\frac{1}{2}k + \frac{1}{3}k = 30 \text{ years}$$

$$\frac{3}{6} \times \frac{1}{2}k + \frac{2}{6} \times \frac{1}{3}k = 30 \times 6_{yrs}$$

$$3k + 2k = 180 \text{ years}$$
$$5k = 180 \text{ years}$$
$$\frac{5k}{5} = \frac{180}{5}^{36} \text{ years}$$
$$k = 36 \text{ years}.$$

Mukasa is 36 years old.

(3mks)

(b) How old is the younger child?

Kityo is a third his age.

$$\frac{1}{3} \times 36 \text{ years}$$
$$\frac{1}{3} \times \overset{12}{36} \text{ years}$$

12 years

The younger child is 12 years old

(1mrk)

23. Shanitah went to the market and bought the following items.

(i) $3\frac{1}{2}$ Kg of rice in half kg packets at shs. 1,900 @ pack

(ii) 3kgs of meat at shs. 14,000 @ kg.

(iii) 12 tomatoes at shs. 500 for every 4 tomatoes.

(iv) $2\frac{1}{2}$ Kg of sugar at shs. 12,500/=

(a) Calculate the total amount she spent on all the items.

Rice.

$\frac{1}{2}$kg → sh.1900

1kg → sh.1900×2

→ sh.3800

$3\frac{1}{2}$kg at sh.3800×$\frac{2}{2}$

Sh. $\frac{1900}{3800}$×7
$\frac{}{2}$

Sh. 13,300

Meat.

1kg at sh.14000

3kg at sh 14000×3

Sh.14000
× 3
Sh.42,000

tomatoes

4 tomatoes at sh.500

1 tomato at sh.$\frac{500}{4}$

12 tomatoes at sh.$\frac{500}{4}$×12^3

Sh.1,500

total amount

Sh. 13,300
Sh. 12,500
Sh. 42,000
+ Sh. 1 50 0
─────────
Sh. 69,300

(5mrks)

(b) If she was given change of shs.700, how much money did she take to the shop?

Sh. 69300
+ Sh. 700
─────────
Sh 70,000

(2mrks)

24. Using a ruler, pencil and a pair of compasses only, construct a triangle **LMN**. Where angle **LMN**=60⁰, line **MN**= 7cm, and angle **MNL**= 45⁰ in the space below.

Accurate shape

Sketch.
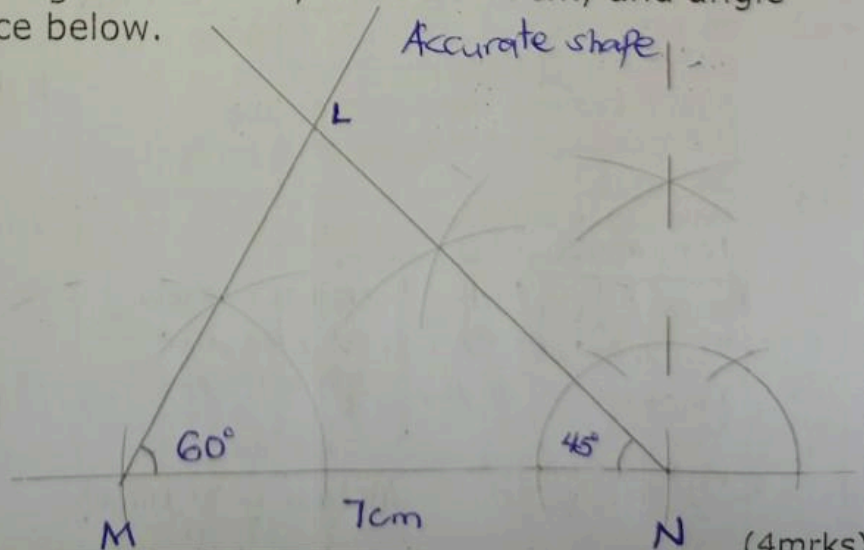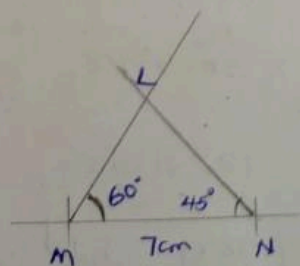
(4mrks)

(b) Measure line **LM**

$$5.1 \text{ cm}$$

(1mrk)

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25. A tailor used $\frac{3}{8}$ of a roll of cloth in making jackets and $\frac{2}{5}$ of the remainder in making trousers. He was then left with 9 metres. How long was the roll of the cloth at first?

	Fraction for trousers	Fraction spent	Fraction left	Length of the cloth
Jackets → $\frac{3}{8}$	$\frac{2}{5} \times \frac{5}{8}$	$\frac{3}{8} + \frac{1}{4}$	$1 - \frac{5}{8}$	3 parts → 9 metres
Remainder			$\frac{1}{1} - \frac{5}{8}$	1 part → $\frac{9}{3}$ metres
$\frac{1}{1} - \frac{3}{8}$	$\frac{2}{5} \times \frac{5}{8}_4$	$\frac{3+2}{8}$	$\frac{8-5}{8}$	1 part → 3 metres
$\frac{8-3}{8}$		$\frac{8}{8}$	$\frac{8}{8}$	8 parts → 8×3 metres
$\frac{5}{8}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{3}{8}$	8 parts → 24 metres

The roll of the cloth was 24 metres.

(5mrks)

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26. Workout: $\dfrac{1.8 \times 4.8}{0.8 \times 5.4}$

$= (1.8 \times 4.8) \div (0.8 \times 5.4)$

$= \left(\dfrac{18}{10} \times \dfrac{48}{10}\right) \div \left(\dfrac{8}{10} \times \dfrac{54}{10}\right)$

$= \dfrac{18}{10} \times \dfrac{48}{10} \times \dfrac{10}{8} \times \dfrac{10}{54}$

$= \dfrac{18}{10} \times \dfrac{48}{10} \times \dfrac{10}{8} \times \dfrac{10}{54}$

$= \dfrac{2}{1}$

$= 2$

(3mrks)

(b) Express 0.1333...........as a fraction in its lowest terms

let the fraction be k.

$k = 0.1333...$

$k \times 10 = 0.1333... \times 10$

$10k = 1.333$

$10k - k = 1.333 - 0.133$

$9k = 1.2$

$9k \times 10 = 1.2 \times 10$

$90k = 12$

$\dfrac{90k}{90} = \dfrac{12}{90}$

$k = \dfrac{12 \div 6}{90 \div 6}$

$k = \dfrac{2}{15}$

method 2

Major	Non Recurring
0.13	0.1

$\dfrac{13-1}{100-10}$

$\dfrac{12 \div 6}{90 \div 6}$

$\dfrac{2}{15}$

(3mrks)

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27. Moses and Ali went on a journey. Moses started at 6:00a.m and walked the distance at 5km/hr. Ali cycled at 15km/hr. They arrived together at 11:00a.m. At what time did Ali start his journey?

Duration for Moses
$D = E.T - S.T$

Hrs min
11 : 00
− 6 : 00
5 : 00
5 hours

Distance Covered
$D = S \times T$
$= 5\text{km} \times 5h$
$= \dfrac{5\text{km} \times 5h}{1h}$
$= 25\text{km}$

Time take by Ali
$T = D \div S$
$= 25\text{km} \div 15\text{km}$
$= 25\text{km} \times \dfrac{1h}{15\text{km}}$
$= 1\frac{2}{3}\text{hours}$

Minutes in $\frac{2}{3}$
1hour = 60 min
$\frac{2}{3}$ hour $= \frac{2}{3} \times \dfrac{60\,min}{3}$
$= 40\,min$
1 hour 40 min

Ali's starting time
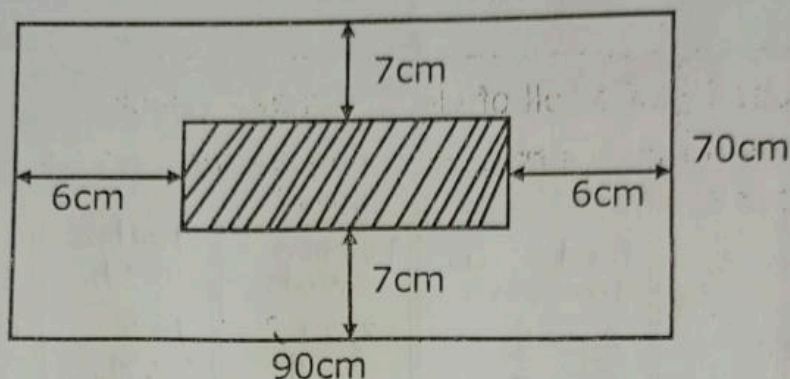$S.T = E.T - Duration$
Hrs min
11 : 00 (+00)
− 1 : 40
9 : 20 a.m

Ali started at 9:20a.m
(5mrks)

28. A piece of cloth is laid on a table 90cm long and 70cm wide as show in the figure below. The area covered by the piece of cloth is shaded.

28 (a)	Find the length and width of the piece of cloth.	(b)	Find the area of the table which is not covered with a piece of cloth.

28 (a)

Length	width
90cm − 6cm − 6cm	70cm − 7cm − 7cm
84cm − 6cm	63cm − 7cm
78cm	56cm

(2mrks)

(b)

Area of the table
L x w
90cm x 70cm
6,300 cm²

Area of the cloth
= L x w
= 78cm x 56cm
= 4,368 cm²

Area not covered by cloth
6300 cm²
− 4368 cm²
‾‾‾‾‾‾‾‾‾‾
1,932 cm²

(3mrks)

29. A man got a loan of sh. 120,000 from a Savings and Credit Cooperative Society at a simple interest rate of 8% per annum. He paid an interest of sh. 7,200 on the loan. For how long was the loan?

$$S.I = P \times R \times T$$

$$sh. 7200 = sh. 120,000 \times \frac{8}{100} \times T$$

$$sh. 7200 = sh. 9600 \times T$$

$$\frac{sh. 7200}{sh. 9600} = \frac{sh. 9600 \times T}{sh. 9600}$$

$$T = \frac{72 \div 12}{96 \div 12}$$

$$T = \frac{6}{8} \frac{3}{4}$$

$$T = \frac{3}{4} \text{ years}$$

1 year = 12 months

$$\frac{3}{4} \text{ years} = \frac{3}{4} \times 12 \text{ months}$$
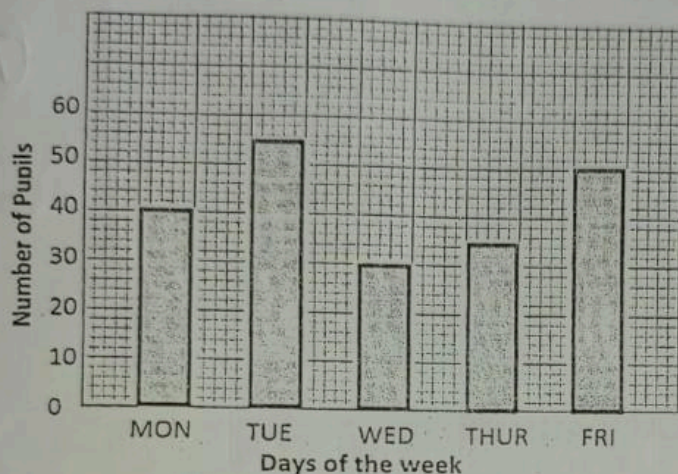
= 9 months.

The loan was for 9 months.

(3mrks)

30. The graph below shows the attendance of P.7 pupils last week in Kagera primary school. Use it to answer the questions that follow. If it registered 60 pupils in the primary seven class.

Days of the week	Mon	Tue	Wed	Thur	Fri
No. pupils	40	55	30	35	50

Number of Pupils / Days of the week

(a)	How many pupils were present on Thursday?

35 pupils.

(1mrk)

(b)	Find the difference between the highest and the lowest attendance.

$$55 \text{ pupils}$$
$$-30 \text{ pupils}.$$
$$\overline{25 \text{ pupils}}.$$

(1mrk)

(c)	How many pupils were absent on Tuesday?

$$\overset{5}{\cancel{6}0} \text{ pupils}$$
$$-55 \text{ pupils}$$
$$\overline{05 \text{ pupils}}$$

5 pupils   (1mrk)

(d)	Find the average number of pupils absent in that week.

Mon	Tue	Wed	Thur	Fri
60	$\overset{5}{\cancel{6}0}$	60	$\overset{5}{\cancel{6}}10$	60
-40	-55	-30	-35	-50
20	05	30	25	10

$$\text{Average} = \frac{\text{Sum of data}}{\text{Number of data}}$$

$$= \frac{20+5+30+25+10}{5}$$

$$= \frac{90}{5}$$

$$= \frac{90}{5}$$

$$= 18 \text{ pupils}$$

(3mrks)

WA.D.E.B   INTERNAL ASSESSMENT   P.7   MATHEMATICS   2023   PG8

31. (a)	Solve for **n**: $34_n = 201_{three}$	(b)	Simplify: $(^-3 - ^-9) \div (^-7)$

31. (a)

$34_n = 201_{three}$

$\begin{array}{l} L_{ones} \\ L_n \end{array}$ $\begin{array}{l} L_{ones} \\ L_{three\,s} \\ L_{three\,threes} \end{array}$

$(3 \times n) + (4 \times 1) = (2 \times 3 \times 3) \times (6 \times 3) + (1 \times 1)$

$3n + 4 = 18 + 0 + 1$

$3n + 4 = 19$

$3n + 4 - 4 = 19 - 4$

$3n = 15$

$\dfrac{3n}{3} = \dfrac{15}{3}$

$n = 5$

$n = five$

n is base five

(2mrks)

31. (b)

$\dfrac{(-3 - (-9)) - (-7)}{-2}$

$\dfrac{-3 + 9 + 7}{-2}$

$\dfrac{-3 + 16}{-2}$

$\dfrac{16 - 3}{-2}$

$\dfrac{13}{-2}$

$-6\frac{1}{2}$

$-6\frac{1}{2}$

(3mrks)

32. The table below shows how adverts are charged in a news paper per week.

SIZE	BLACK AND WHITE	FULL COLOUR
Full page (inside)	1,145,300/=	1,750,000/=
Half page	572,650/=	875,000/=
Quarter page	286,000/=	438,000/=
Front page	1,140,000/=	1,630,000/=
Back page	280,000/=	610,000/=
20% DISCOUNT EVERY AFTER 7 DAYS		

What would be the cost of advertising a full page in black and white for 3 weeks?

Week 1

sh. 1,145,300

Week 2

$100\% - 20\%$
80%

$\dfrac{80}{100} \times sh. 1,145,300$

sh. 916,240

Week 3

$100\% - 20\%$
80%

$\dfrac{80}{100} \times sh. 916,240$

sh. 732,992

total cost

sh. 1,145,300
sh. 916,240
+sh. 732,992
sh. 2,794,532

(4mrks)

It would be
sh. 2,794,532

END