Guide compiled by Tr. Alex

RAPHA EXAMINATIONS BOARD

" Education is an investment"

P.7 STANDARD EXAMINATIONS SET **15**

MATHEMATICS

Time allowed: 2 Hours 15 Minutes

Random No.							Personal No.		

Candidate' Name:.....

Candidate's Signature:.....

District Name:.....

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 answers to both sections **A** and **B must** be written in the spaces provided.
5. **All** answers must be written using a **blue** or **black ball** point **pen** or i**nk**. Diagrams should be drawn in a pencil.
6. **Unnecessary** changes in your work may lead to **loss** of marks.
7. Any handwriting that **cannot** be easily read may lead to **loss** of marks.
8. **Do not** fill anything in the table indicated: **" FOR EXAMINERS' USE ONLY"** and boxes inside the question paper.

FOR EXAMINERS' USE ONLY		
Qn. No	MARKS	EXR'S No.
1 – 10		
11 – 20		
21 – 22		
23 – 24		
25 – 26		
27 – 28		
29 – 30		
31 – 32		
TOTAL		

BUZIGA: +256-778710993

TURN OVER

SECTION A: 40 MARKS

*Answer **all** questions **in** this section.*
*Questions **1** to **20** carry **two** marks each.*

1. Find the reciprocal of $(\frac{1}{4}+\frac{1}{3})$

$\frac{1}{4}+\frac{1}{3}=\frac{3+4}{12}$

$\frac{7}{12}$

Reciprocal → $1 \div \frac{7}{12}$

$1 \times \frac{12}{7} = \frac{12}{7}$

2. Determine the square root of the next number in the series below;

0, 4, 10, 18, 27, 37

+4 +6 +8 +9 +10 (composite nos)

$\sqrt{37}$

3. Write CXCIX in the Hindu Arabic format.

C XC IX

100 + 90 + 9

100
90
+ 9
199

4. Solve the equation if Y=4; PY +2 = 10Y

PXy +2 = 10Xy

PX4 +2 = 10X4

4P +2 = 40

4P +2-2 = 40-2

$\frac{4P}{4} = \frac{38}{4}$

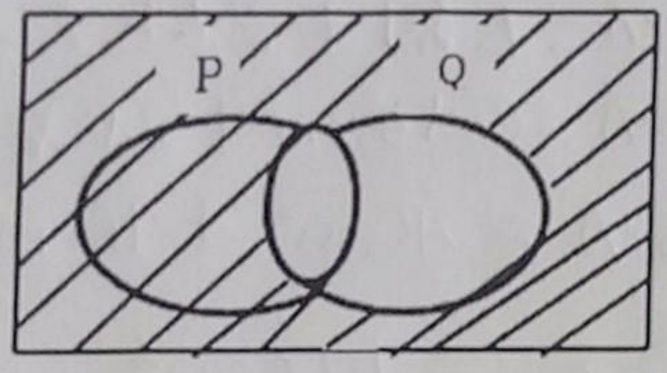
$P = 9\frac{1}{2}$

5. Use exponents to expand 94.06

10^1	10^0	10^{-1}	10^{-2}
9	4	0	6

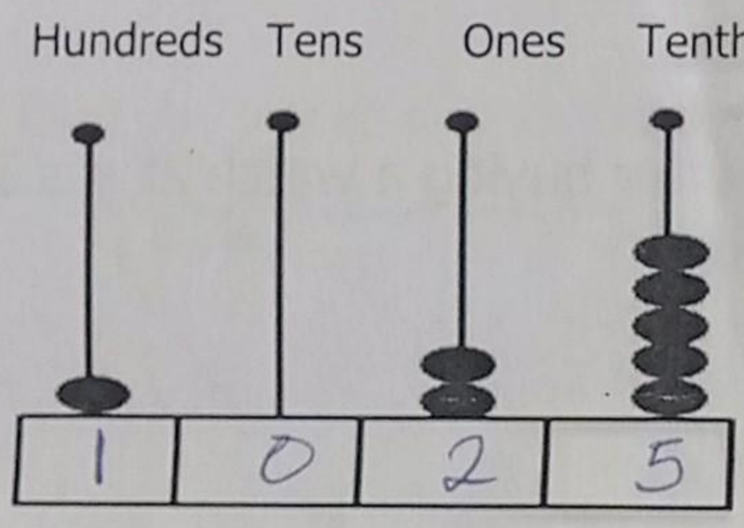
$(9 \times 10^1) + 4 \times 10^0 + (6 \times 10^{-2})$

6. Describe the shaded region



Q'

7. Write the number represented on the abacus in words



102 + 5 tenths

$102 + 5 \times \frac{1}{10}$

$102 + \frac{5}{10}$

$102 + 0.5$

102.5

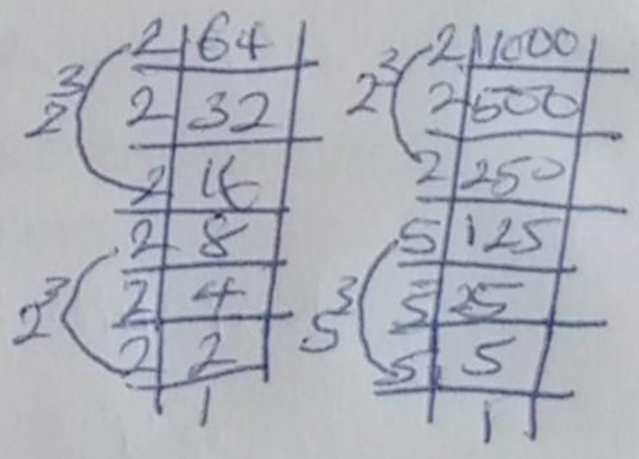
102.0
0.5
102.5

8. Find the cube root of 0.064.

$\sqrt[3]{0.064} = \sqrt[3]{\frac{64}{1000}} = \sqrt[3]{\frac{2^6 \times 2^3}{2^3 \times 5^3}}$

$\frac{2 \times 2}{2 \times 5} = \frac{4}{10}$

0.4



9. Write in short: (6.4×10^{-4})

$\frac{64}{10} \times \frac{1}{10 \times 10 \times 10 \times 10}$

$\frac{64}{10} \times \frac{1}{10000} = \frac{64}{100,000}$

0.00064

10. Calculate the distance covered in 9 seconds at an average speed of 40 meters in every second?

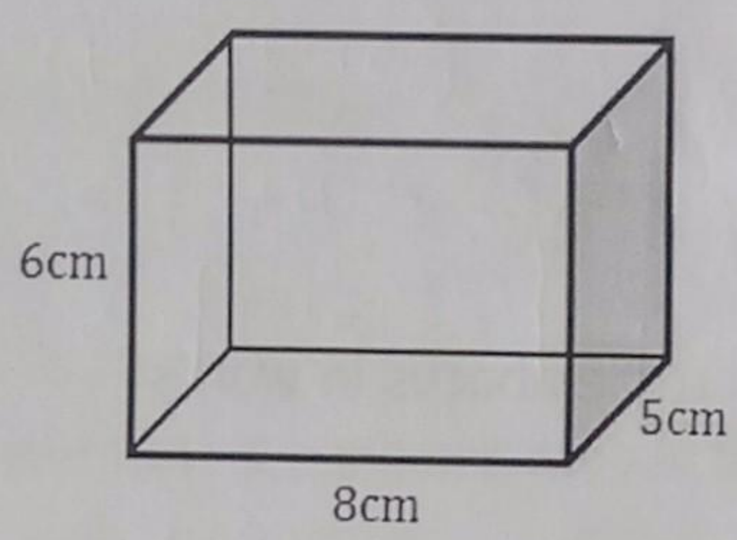
$D = S \times T$

$D = \frac{40m}{1s} \times 9s$

$D = 40m \times 9$

$D = 360m.$

11. Work out the total surface area of the prism below if it has longer face off.



T.S.A = LW + 2Lh + 2wh

T.S.A = (8×5)cm² + (2×8×6)cm² + (2×5×6)cm²

T.S.A = 40cm² + 96cm² + 60cm²

T.S.A = 196cm²

96
60
+40
196

12. Musa made a profit of shs.4950 after buying a watch at shs.35900. Find the price he sold the watch at.

S.P = B.P + P

Sh. 35,900
+Sh. 4950
Sh. 40,850

13. A meeting that lasted for 3.5hrs ended at 10:45am
At what time did it kick start?

Duration : 3.5h → 3h 30min

S.T = E.T − D

H M
10 : 45
−3 : 30
7 : 15 am

14. Convert $\frac{7}{100}$ to a decimal.

$\frac{7}{100} = 0.07$

15. Odama bought 120 shares from a village Sacco at an interest rate of 15% per annum. Each share costs shs.3000. Calculate the total amount Odama has after 2 years.

P = Sh.3000 × 120
Sh.360,000

I = P × R × T

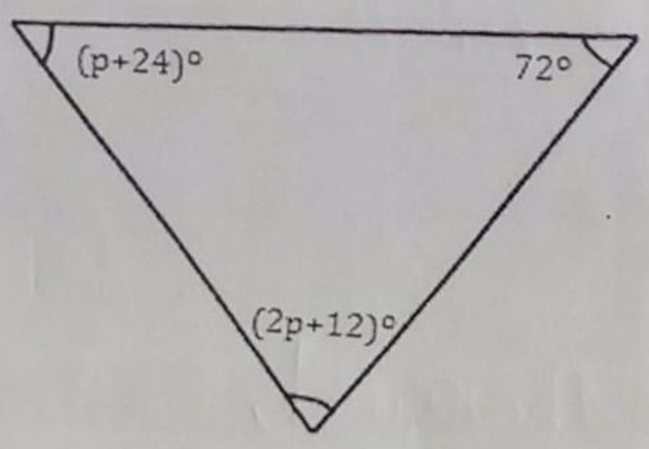
I = Sh.360,000 × $\frac{15}{100}$ × 2

I = Sh.108,000

Amount = P + I

Sh.360,000
+Sh.108,000
Sh.468,000

16. Find the value of p in the figure below.



$(p+24)^\circ + (2p+12)^\circ + 72^\circ = 180^\circ$

$p + 24 + 2p + 12 + 72 = 180$

$p + 2p + 24 + 12 + 72 = 180$

$3p + 108 - 108 = 180 - 108$

$\frac{3p}{3} = \frac{72}{3}$

$p = 24$

17. If a tourist came from Britain with $850. How much money would he get in Ugandan currency if a pound sterling is sold at shs.5350 and bought at shs.5180?

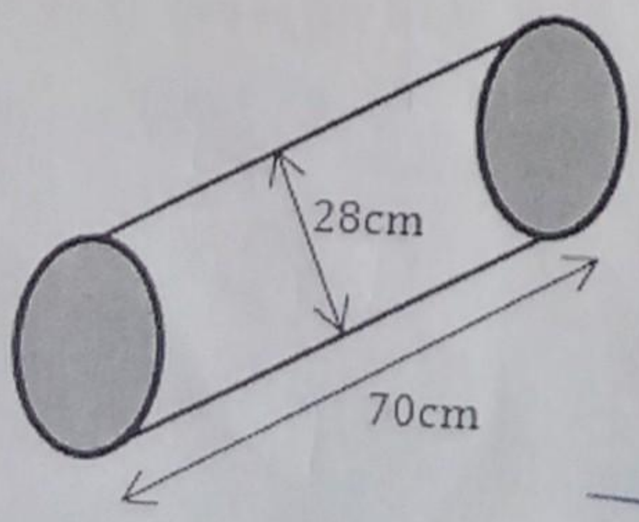
1 pound → Sh.5180

850 pounds → Sh.5180 × 850

→ Shs.4,403,000

5180 × 850
25900
+414400
4403000

18. Find the total area of the shaded faces in the cylindrical tank below.



$A = 2\pi r^2$

$A = \left(2 \times \frac{22}{7} \times \frac{28}{2} \times \frac{28}{7}\right) cm^2$

$A = 1232 cm^2$

88 × 14
352
+880
1232

19. If a = 2, b = 4 and c = -3. Evaluate a (3b -c).

~~a(3xb)~~

a(3xb-c)

2(3x4--3)

2[12-(-3)]

2(12+3)

2x15

30

20. Write 255220 in words.

TH	units
H T O	H T O
2 5 5	2 2 0

Two hundred fifty-five thousand, two hundred twenty.

SECTION B: 60 MARKS

21. a) Angela is 3 years younger than Jovia. How old is Jovia if their total age is 33 years?

Let 'w' rep Jovia's age

Jovia	Angela	T.T.age
w	w-3	33

w+w-3 = 33

2w-3 = 33

2w-3+3 = 33+3

$\frac{2w}{2} = \frac{36}{2}$

w = 18 years.

(2 marks)

b) Solve for X: $2x + 5 \geq 20$

2x+5≥20

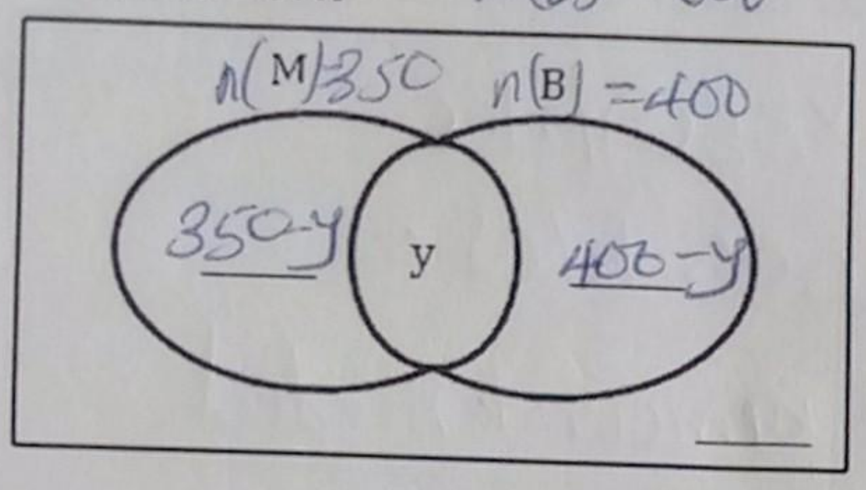
2x+5-5≥20-5

$\frac{2x}{2} \geq \frac{15}{2}$

$x \geq 7\frac{1}{2}$

(3 marks)

22. a) In a school of 600 pupils, 350 like Matooke and 400 like Beans. No one prefers neither. Complete the Venn diagram below using the above information. $n(\xi) = 600$ *(1 mark)*



b) Find the value of y. *(2 marks)*

$y = (350 + 400) - 600$

$y = 750 - 600$

$y = 150$

c) How many pupils like only one food stuff? *(2 marks)*

$n(M)$ only + $n(B)$ only

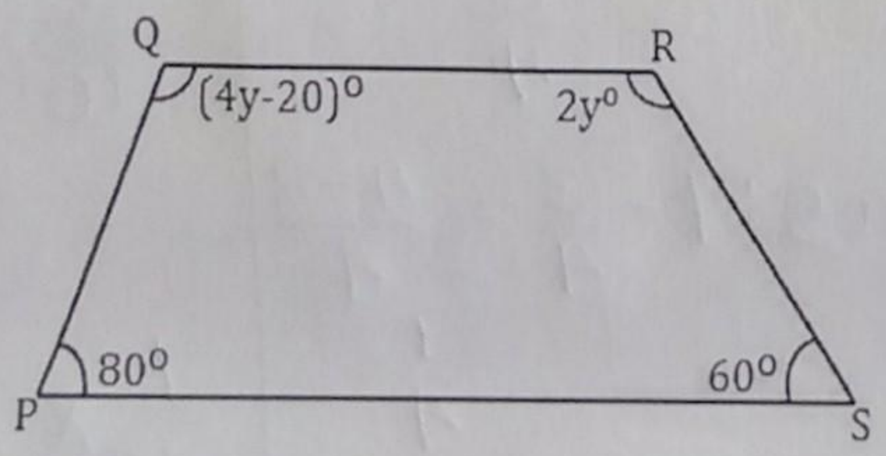
$(350 - y) + (400 - y)$

$(350 - 150) + (400 - 150)$

$200 + 250$

450 pupils.

23. a) Name the quadrilateral below *(1 mark)*



Tra

b) Find the size of angle PQR. *(4 marks)*

int∠ sum = $180°(n-2)$

$180°(4-2)$

$180° \times 2$

$360°$

$(4y - 20)° + 2y° + 80° + 60° = 360°$

$4y - 20 + 2y + 140 = 360$

$4y + 2y + 140 - 20 = 360$

$6y + 120 = 360$

$6y + 120 - 120 = 360 - 120$

$\frac{6y}{6} = \frac{240}{6}$

$y = 40$

$\angle PQR = (4 \times y - 20)°$

$(4 \times 40 - 20)°$

$(160 - 20)° = 140°$

24. a) Kansime was to cover the floor of her house measuring 42m by 105m with square tiles 30cm each side.

How much money will she need to cover the floor with tiles costing shs.17,100 each? (5 marks)

1m → 100cm

42m → 42X100cm
4200cm

105m → 105X100cm
10500cm

No of tiles

$\frac{140}{4200} \times \frac{350}{10500}$
30 30

(140 X350)tiles
49,000 tiles.

Total amount needed

Sh.17,100 X49,000

Sh.837,900,000

35
X14
140
+35
490

$^{2}\cancel{1}^{6}71$
X 49
1539
+684
8379

25.Ronald spent 20% on clothing, 30% on food and $\frac{1}{2}$ of the reminder on fees. If he saves shs.270.000, how much more money does he spend on food than fees ? (5 marks)

Ronald → $\frac{20}{100} = \frac{1}{5}$
5

Clothing → $\frac{30}{100} = \frac{3}{10}$

Total fraction

$\frac{1}{5} + \frac{3}{10} = \frac{2+3}{10}$

$\frac{5}{10} \div 5$

$\frac{1}{2}$

Remainder : $1 - \frac{1}{2} = \frac{2-1}{2}$

$\frac{1}{2}$

Fees → $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

Total fraction

$\frac{1}{2} + \frac{1}{4} = \frac{2+1}{4}$

$\frac{3}{4}$

Saves : $1 - \frac{3}{4} = \frac{4-3}{4}$

$\frac{1}{4}$

Total amount

Sh.270,000 ÷ $\frac{1}{4}$

Sh.270,000 X $\frac{4}{1}$

Sh.1,080,000

Difference in fraction

Food - fees

$\frac{3}{10} - \frac{1}{4} = \frac{6-5}{20}$

$\frac{1}{20}$

$\frac{1}{20}$ X Sh.1,080,000

Sh.54,000 more

26. The table below shows Fatuma's shopping bill.

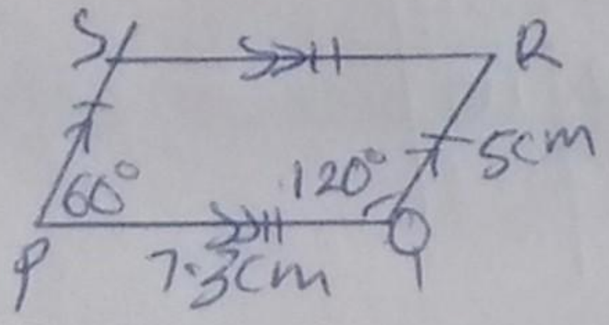
Item	Qty	Amount	Unit cost
Soap	4 bars	Sh. 14,600	Sh 3,650
Coffee	2 tins	Sh. 9000	Sh 4,500
Beans	3 -kg	14,000	Sh. 14000/3
Sugar	750 gm	Sh. 2,400	Sh. 3,200
Total Cost	_____	Sh. 40,000	_____

a) Complete the above table (5 marks)

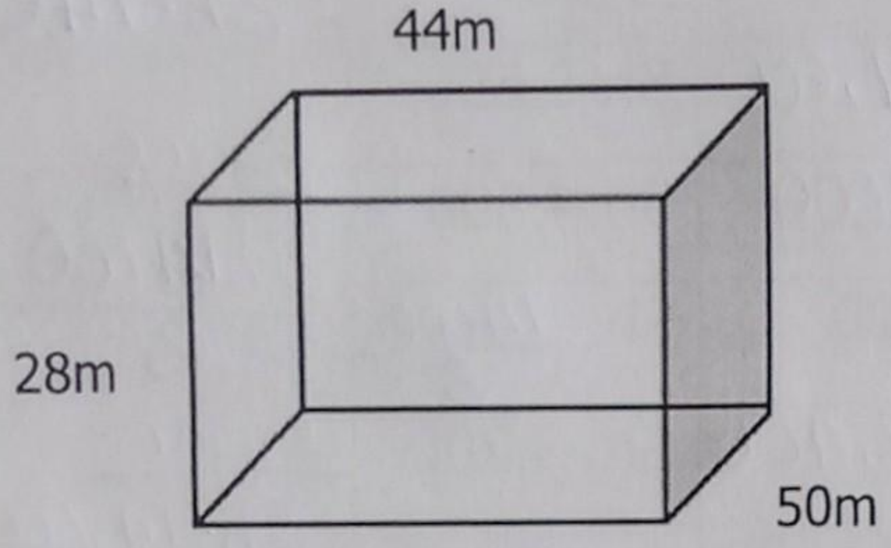
b) If she paid sh 37,500 for all the items, calculate her percentage discount (1 mark)

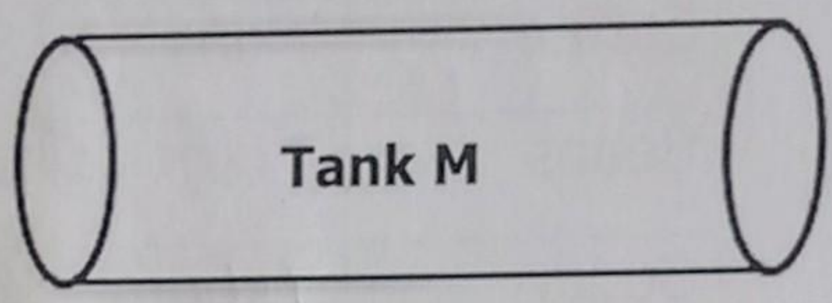
27. Using a ruler, a pencil and a pair of compasses only. Construct a parallelogram PQRS where PQ = 7. 3 cm and QR = 5 cm < PQR = 120° and QPS = 60° (5 marks)

sketch



28. The tanks below hold the same amount of water when full. Find the diameter of tank M *(4 marks)*





$V = V$

$\frac{\frac{1}{22}}{7} \times r^2 \times h = L \times W \times H$

$r^2 = \frac{44m \times 50m \times 28m}{22 \times 50m}$

$r^2 = 44m^2 \times 28 \div \frac{22}{7}$

$r^2 = 44m^2 \times 28 \times \frac{7}{22}$

$\sqrt{r^2} = \sqrt{392m^2}$

radius =

29. a) 3 numbers are in the ratio of 4: 5: 6. If their LCM is 600, find their GCF *(4 marks)*

Nos : $\frac{150}{4}, \frac{120}{5}, \frac{100}{6}$

150, 120, 100

2	150	120	100
5	75	60	50
	15	12	10

GCF = 2 × 5

10

b) Find the range of the numbers. *(2 marks)*

Range → 150 − 100 = 50

30. Copy and complete the table below given that y=3x - 5. *(5 marks)*

x	4	1	-	-1	3
y	7	-2	___	-8	4

$y = 3x - 5$
$y = 3 \times 4 - 5$
$y = 12 - 5$
$y = 7$

$3x - 5 = y$
$3x - 5 = -2$
$3x - 5 + 5 = -2 + 5$
$\frac{3x}{3} = \frac{3}{3}$
$x = 1$

$3x - 5 = -8$
$3x - 5 + 5 = -8 + 5$
$\frac{3x}{3} = \frac{-3}{3}$
$x = -1$

$y = 3x - 5$
$y = 3 \times 3 - 5$
$y = 9 - 5$
$y = 4$

31. A man deposited sh. 700,000 in a bank but after 4 years, he withdrew a total of sh. 980,000. Calculate the interest rate. *(4 marks)*

Interest → Sh. 980,000
− Sh. 700,000
Sh. 280,000

$P \times R \times T = I$
$Sh.700,000 \times \frac{R}{100} \times 4 = Sh.280,000$

$\frac{Sh.\ 28000R}{Sh.\ 28000} = \frac{Sh.\ 280,000}{Sh.\ 28000}$

$R = 10\%$

32. a) There are 100kg of posho to last 20 days for 60 girls. How long will the same food last for 25 girls? *(3 marks)*

Girls	Days
60	20
1	20×60 = 1200
25	1200/25 = 48

48 days

b) Decrease 6000 children by 33% then by 12% *(3 marks)*

1st decrement → 100% − 33% = 67%
2nd decrement → 100% − 12% = 88%

$\frac{67}{100} \times \frac{88}{100} \times 6000$ children.

$\frac{67 \times 88 \times 60}{5}$ children.

$\frac{17688}{5}$ children.

END