PACE

Educate, Inspire, Prepare

PACE EDUCATION SERVICES

Educate. Inspire. Prepare

for

PRE-PLE MERCURY



0750921528
0769185706

Stanbic Bank | 9030024223913
KINSAMBWE NOAH

HARD COPIES

5k
PER CHILD

SOFT COPIES

PDF

21k
EACH SET

QUALITY CONTENT | CURRICULUM ALIGNED | EXAM-READY PRACTICE

PREPARE TODAY, SUCCEED TOMORROW!

GIVE YOUR CHILD THE PACE ADVANTAGE!

SECTION A: 40 MARKS

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

1. Subtract 0.32 from 3.2.

$$\begin{array}{r} 3.20 \\ -0.32 \\ \hline 2.88 \end{array}$$ ✓B2

2. Write "Twenty thousand, twenty" in figures.

Twenty thousand = 20,000
Twenty = + 20
20,020 ✓B2

3. Given that the proper subsets of set P are; {c}, {s}, {t}, {c,s}, {c,t}, {s,t}, {}. Find n(P)

$2^n - 1 = C$
$2^n - 1 = 7$ ✓M1
$2^{n-1+1} = 7+1$
$2^n = 8$

$2^n = 2^3$
$n = 3$ elements
$n(P) = 3$ ✓A

2	8
2	4
2	2
	1

4. Workout: 2 – 10 (finite 12)

2−10 (Finite 12)
(2+12) −10 (Finite 12) ✓B1
14−10 (Finite 12)
4 (Finite 12) ✓B1

5. Find the next number in the sequence:

100, 91, 79, 64, 46, 25 ✓B2
−9 −12 −15 −18 −21

$$\begin{array}{r} 46 \\ -21 \\ \hline 25 \end{array}$$

6. Simplify: $\frac{8^2 \times 2}{2^5}$

Approach I

$\frac{8^2 \times 2}{2^4}$

$\frac{(2^3)^2 \times 2^1}{2^4}$ ✓M1

$\frac{2^{6+1}}{2^4}$

2^{7-4}

2^3 ✓A

Approach II

$\frac{(2^3)^2 \times 2^1}{2^4}$ ✓M1

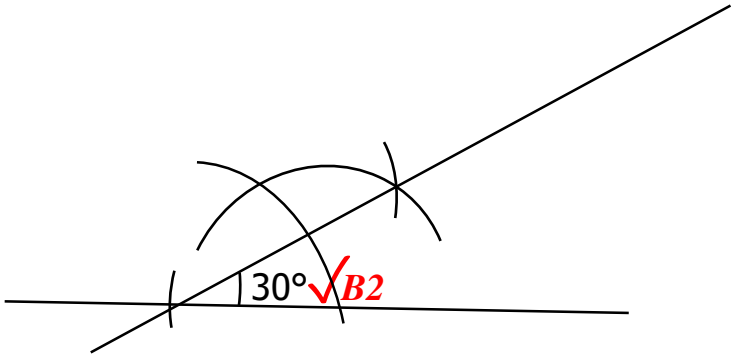
$\frac{2^6 \times 2^1}{2^4}$

$\frac{(2\times2\times2\times2\times2\times2\times2)}{(2\times2\times2\times2)}$

2^3 ✓A

2	8
2	4
2	2
	1

7. Using a ruler, a pencil and a pair of compasses only, construct an angle of 30° in the space provided below.



✓B2

8. Amina is t years old and 8years younger than her brother. If their total age is 30years. Determine Amina's age.

Amina	*Brother*	*Total*
t	*t+8*	*30*

$t + (t+8) = 30$

$2t + 8 - 8 = 30 - 8$ ✓M1

$\frac{2t}{2} = \frac{22}{2}$

$t = 11$

$\therefore$ *Amina is 11 yrs* ✓A1

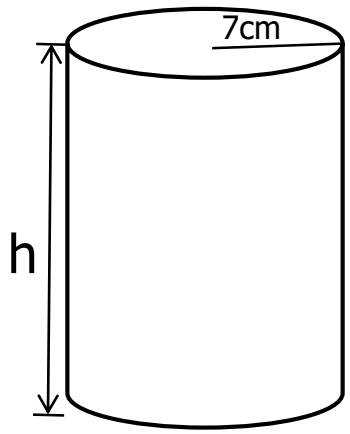
9. Write 305.2 in scientific notation.

$305.2 \div 10 = 30.52$ M1

$30.52 \div 10 = 3.052$

$305.2 = 3.052 \times 10^2$ ✓A1

10. The capacity of a cylindrical tin below is 7.7litres. Calculate its height. (use $\pi = \frac{22}{7}$)



$1l = 1000cm^3$

$7.7l = \frac{77}{10} x\ 1000cm^3$

$V = 7700cm^3$

$\pi r^2 h = volume$

$\frac{22}{7} x\ 7cm\ x\ 7cm\ x\ h = 7700cm^3$ ✓M1

$22cm\ x\ 7cm\ x\ h = 7700cm^3$

$\frac{\cancel{22cm \times 7cm}\ x\ h}{\cancel{22cm \times 7cm}} = \frac{7700cm \times cm \times cm^3}{22cm \times 7cm}$

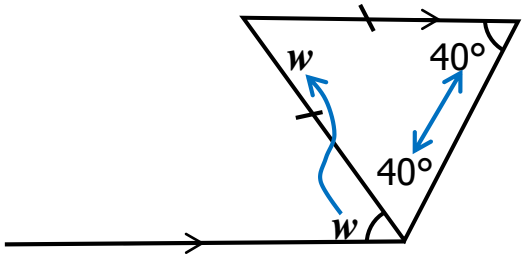
$h = 50cm$ ✓A1

11. A bus reached its destination at 16 40hours after travelling for 7hours. Determine the time at which the journey started.

E.T = 16 40 hours
D = 7h
S.T = E.T − D

H	*Min*	
16	*40*	*✓M1*
−07	*00*	
09	*40*	*✓A1*

12. In the figure below, find the size of w in degrees:



$w + 40° + 40° = 180°$ ✓M1
$w + 80° = 180°$
$w + 80° - 80° = 180° - 80°$
$w = 100°$ ✓A1

13. Find the smallest number of books that can be packed into boxes containing either 12 or 18 books leaving 5 books as the remainder in each case.

2	12	18
2	6	9
3	3	9
3	1	3
	3	1

(2 × 2 × 3 × 3)
4 × 9 ✓M1
36
Small number of books = LCM + R
= 36 + 5
= 41 books ✓A1

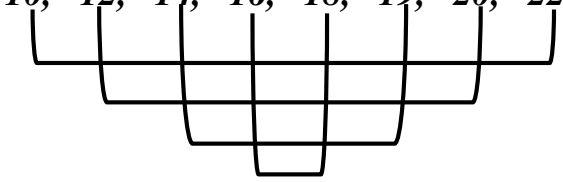
14. Given 1 US dollar ($) costs Uganda shilling (Ugsh) 3,600 and 1 Kenya shilling (Ksh) costs Ugsh. 30. Determine the value of 1US dollar in Kenya shillings.

Cost of 1 US dollar in Ksh.
(~~Ugsh.~~ 360) Ksh. ✓M1
(~~Ugsh.~~ 30)
120 Ksh. ✓A1

15. The data below shows ages in years of pupils in a class; 14, 12, 10, 19, 16, 18, 22, 20. Find the median age.

Arrange the ages either in ascending order or descending:

10, 12, 14, 16, 18, 19, 20, 22



✓*M1*

$$Median = \frac{(16 + 18)}{2}$$

$$Median = \frac{34}{2}$$

Median = 17 years ✓*A1*

16. Correct 7.846 to two decimal places.

0 . t h th
7 . 8 4 6

RDP (Required Decimal Place)

7 . 8 4
+ 0 . 0 1 ✓*B1*
7 . 8 5

∴ 7.846 ≈ 7.85 ✓*A1*

17. Complete the operation shown below.

4 3 *[6]*	9 + 7 = 16
- 8 9	16 − 10 = 6
3 *[4]* 7 ✓*B2*	12 − 8 = 4

18. Thirty-six streetlights are placed at equal intervals along a straight road. The distance from the first to the last streetlight is 1,750 metres. Calculate the distance between two consecutive streetlights.

Interval = No. of streetlights − 1
Interval = 36 − 1
= 35 ✓*M1*

Distance between the streetlights

1750m
35
50m ✓*A1*

19. Solve the inequality: $5 + \frac{3}{c} \geq 8$

$$5 + \frac{3}{c} \geq 8$$
$$\frac{3}{c} \geq 8 - 5$$
$$\frac{3}{c} \geq 3 \quad \checkmark M1$$
$$c \times \frac{3}{c} \geq 3 \times c$$
$$3 \geq 3c$$
$$1 \geq c$$
$$\therefore c \leq 1 \quad \checkmark A1$$

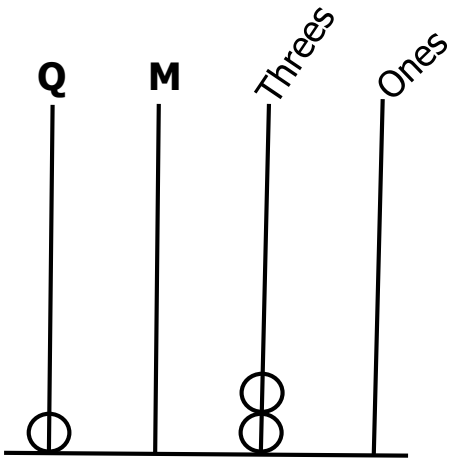
20. 8 technicians can install a solar system in 15days. Determine how many more technicians are needed to complete the same work in 10days working at the same rate.

15 parts rep 8 technicians
1 part rep $(\frac{15 \times 8}{10})$ *technicians*
1 part rep 12 technicians
10 parts rep $(\frac{120}{10})$ *technicians*
10 parts rep 12 technicians ✓M1
More technicians:
$12 - 8$
4 ✓A1

SECTION B: 60 MARKS

Answer **all** *the questions in this section.*
Marks for each question are indicated in the brackets.

21. Use the abacus below to answer questions that follow.



(a) Find the place values represented by the letters.

(i). **Q** (*01 mark*)

Three three threes ✓*B1*

(ii). **M** (*01 mark*)

Three threes ✓*B1*

(b) Convert the numbers represented on the abacus to base four. (*04 marks*)

1020_{three} *to base four.*

3^3	3^2	3^1	3^0
1	0	2	0

$(1\times3\times3\times3) + (2\times3)$ ✓*M1*

$27 + 0 + 6 + 0$

33_{ten} ✓*M1*

33_{ten} *to base ten*

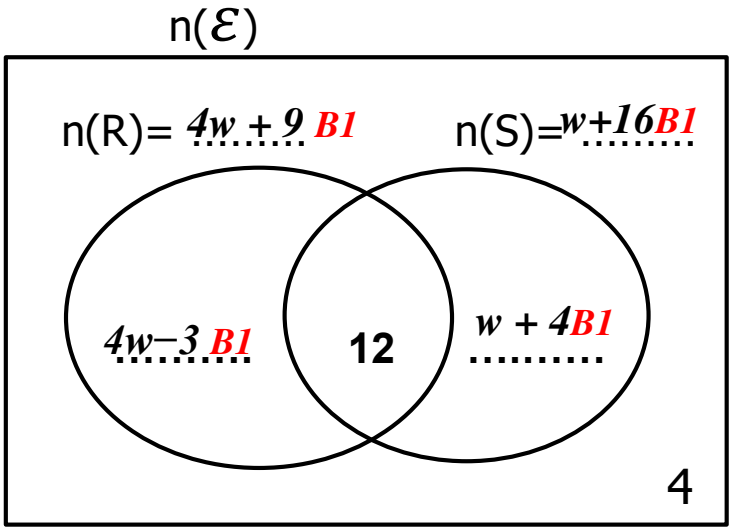
B	No.	R
4	33	1
4	8	0
4	2	2
	0	

✓*M1*

$1020_{two} = 201_{four}$ ✓*A1*

22. In a village, (4w-3) farmers grow rice (R) only, 12 farmers grow both rice and sunflower, (w+4) grow sunflower (S) only, while 4 grow neither of the two types of crops.

(a) Use the given information to complete the Venn diagram below. (*04 marks*)



$n(R) = (4w-3) + 12$
$n(R) = 4w - 3 + 12$
$n(R) = 4w + 9$
$n(S) = w + 4 + 12$
$n(S) = w + 16$ ✓

(b) Given that there are 14 more farmers who grow rice than sunflower, find the value of w. (*02 marks*)

Method I

$4w + 9 = w + 16 + 14$ ✓M1
$4w - w = 16 + 14 - 9$
$\frac{3w}{3} = \frac{21}{3}$ ✓A1
$w = 7$

Method II

$(4w+9) - (w+16) = 14$ ✓M1
$4w - w + 9 - 16 = 14$
$3w - 7 = 14$
$3w - 7 + 7 = 14 + 7$
$\frac{3w}{3} = \frac{21}{3}$ ✓A1
$w = 7$

23. A school bursar deposited 30% of the money collected in the bank which offers a simple interest rate of 20% per annum for 9 months. If he got a total amount of sh. 69,000 after 9 months. Calculate the amount he collected. (*05 marks*)

Let the Principle be P

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

$P + S.I = A$

$P + (P \times R \times T) = A$

$P + (P \times \frac{20}{100} \times \frac{9}{12}) = Sh.\ 69{,}000$ ✓*B1*

$P + \frac{3p}{20} = Sh.\ 69{,}000$

$20 \times P + (20 \times \frac{3p}{20}) = 20 \times Sh.\ 69{,}000$

$20P + 3P = 20 \times Sh.\ 69{,}000$ ✓*B1*

$\frac{23P}{23} = \frac{(20 \times Sh.69{,}000)}{23}$

$P = Sh.\ 60{,}000$ ✓*B1*

Amount collected:

$Sh.\ 60{,}000 \div \frac{30}{100}$

$Sh.\ 60{,}000 \times \frac{100}{30}$ ✓*B1*

$Sh.\ 20{,}000 \times 10$

$Sh.\ 200{,}000$ ✓*B1*

24. The interior and the exterior angles of a regular Polygon are in the ratio of 5:1 respectively.

(a) Name the polygon. (*03 marks*)

Total ratio:

$5 + 1 = 6$

Exterior angle:

$\frac{1}{6} \times 180°$

$30°$ ✓*M1*

No. of sides:

$360°$

Exterior angle

$\frac{360°}{30°}$ ✓*M1*

12 *sides*

∴ The polygon is Dodecagon. ✓*A1*

(b) Calculate the sum of all interior angles of the polygon. (*02 marks*)

Interior angle sum:

$180°\ (n - 2)$

$180°\ (12 - 2)$ ✓*M1*

$180°\ (10)$

$1800°$ ✓*A1*

25. A shopkeeper packs 24 bottles of juice in a carton. The total mass of the carton and the bottles of juice is 15.2Kg. The empty carton has a mass of 0.8Kg. Each empty bottle has a mass of 100g. If each bottle contains the same amount of juice, determine the mass of the juice in each bottle.

(*04 marks*)

Weight of only 24 bottles of juice

$15.2Kg - 0.8Kg$

$14.4Kg$

Weight in grams:

$1Kg = 1{,}000g$

$14.4Kg = 14.4 \times 1{,}000g$ ✓B1

$14{,}400g$

Weight of empty 24 bottles:

$1 \text{ bottle} = 100g$

$24 \text{ bottles} = 24 \times 100g$

$2{,}400g$ ✓B1

Mass of juice only

$14{,}400g - 2{,}400g$

$12{,}000g$ ✓B1

Mass of juice in each bottle:

$\frac{12000g}{24}$

$500g$ ✓B1

The mass of the juice is 500g.

26. Kasimu went shopping with sh. 40,000. He bought items shown in the table below and was given a discount of sh. 2,600 on the total cost. He paid for the items and received sh. 10,100 as change.

Complete the table below. (*06 marks*)

Item	Quantity	Unit cost	Total cost
Sugar	2Kg	Sh. 5,000	Sh. 10,000
Meat	$\frac{1}{2}$ Kg ✓B1	Sh. 16,000	Sh. 8,000
Soap	3 bars	Sh. **4,500** ✓B1	Sh. **13,500** ✓B1
Salt	500g	Sh. 2,000	Sh. 1,000
Total Expenditure			**Sh. 32,500** ✓B1

Total expenditure

Sh. 40,000

− Sh. 10,100

Sh. 29,900 ✓B1

Sh. 29,900

− Sh. 2,600

Sh. 32,500 ✓B1

Meat:

Sh. 8000

Sh.16, 000

$\frac{1}{2}$ *Kg* ✓

Total cost of soap:

Sh. 32,500 − (Sh.10,000+sh.8,000+sh.1,000)

Sh. 32,500 − Sh.19, 000

Sh. 13,500 ✓

Unit cost of soap:

$\frac{Sh.13{,}500}{3}$

Sh. 4,500 ✓

27. The average of three consecutive multiples of 5 is 25. Find the numbers. (*04 marks*)

Let the first multiple be l.

First	*Second*	*Third*	*Sum*
l	*l+5*	*l+10*	*25×3*

$l + (l+5) + (l+10) = 75$ ✓*M1*

$l + l + l + 5 + 10 = 75$

$3l + 15 = 75$

$3l + 15 - 15 = 75 - 15$

$3l = 60$

$\frac{3l}{3} = \frac{60}{3}$

$l = 20$ ✓*M1*

First multiple k = 20

Second multiple:

$l+5$

$20+5$

25 ✓*M1*

Third multiple:

$l+10$

$20+10$

30

∴ The numbers are 20, 25 and 30. ✓*A1*

28. (a) Solve: $3(v - 5) = v + 7$ (*02 marks*)

$3(v-5) = v+7$

$3v - 15 = v + 7$ ***M1***

$3v - v = 7 + 15$

$2v = 22$

$\frac{2v}{2} = \frac{22}{2}$

$v = 11$ ✓***A1***

(b) Simplify: $\frac{3}{8}(16f - 24j)$ (*02 marks*)

$\frac{3}{8}(16f - 24j)$

$(\frac{3}{8} \times 16f) - (\frac{3}{8} \times 24j)$ *M1*

$6f - 9j$ ✓*A1*

29. Our school team won 8 more games than the number lost to the other teams. The probability of winning a game was $\frac{5}{8}$.

(a) Find the number of games the team lost (*03 marks*)

Probability of losing a game

$1 - \frac{5}{8}$

$\frac{8}{8} - \frac{5}{8}$

$\frac{3}{8}$ ✓*B1*

Difference in Probability of winning and losing:

$\frac{5}{8} - \frac{3}{8}$

$\frac{2}{8}$ ✓*B1*

Games lost:

2 parts rept 8 games

1 part repts $\frac{8}{2}$ *games*

1 part rept 4 games

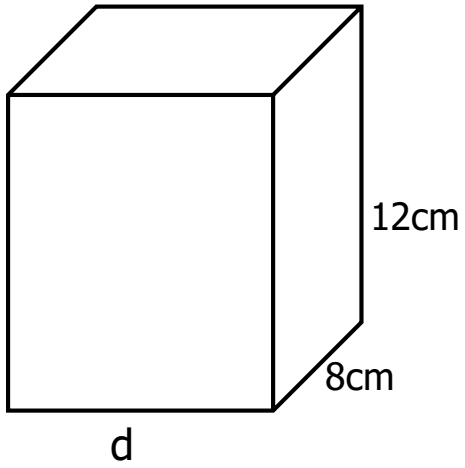
3 parts rept 3×4 games

12 games ✓*A1*

(b) Calculate the total number of games played in the tournament.
(*02 marks*)

1 part repts 4 games ✓*M1*
8 parts rep 8×4 games
Total games played = 32 games ✓*A1*

30. The total length of all the edges of the cuboid below is 120cm. Study and use it to answer the questions that follow.



(a) Determine the value of d (*02 marks*)

$$4L + 4W + 4H = length\ of\ all\ Edges$$
$$(4\times d) + (4\times 8cm) + (4\times 12cm) = 120cm \quad \checkmark M1$$
$$4d + 32cm + 48cm = 120cm$$
$$4d + 80cm = 120cm$$
$$4d + 80cm - 80cm = 120cm - 80cm$$
$$\frac{4d}{4} = \frac{40cm}{4}$$
$$d = 10cm \quad \checkmark A1$$

(b) Calculate the volume of the cuboid (*02 marks*)

$$Volume = (L \times W \times H)$$
$$V = 10cm \times 8cm \times 12cm \quad M1$$
$$V = 80cm^2 \times 12cm$$
$$V = 960cm^3 \quad \checkmark A1$$

31. A motorist started a journey of 180Km at 7:30 a.m at a speed of 45Km/h. At 9:30 a.m, his car broke down and the repair took 30minutes. Calculate the speed at which the motorist must drive the remaining distance to reach his destination at 12:00 noon. (*05 marks*)

Duration=E.T – S.T

$9:30a.m$

$-\ 7:30a.m$

$2:00h$ ✓*B1*

Distance covered:

$D = S \times T$

$D = \frac{45Km}{1\,h} \times 2h$

$D = 90Km$ ✓*B1*

Remaining journey:

$180Km$

$-\ 90Km$

$90Km$ ✓*B1*

Time he resumed:

$9:30a.m$

$+\ 30$

$10:00a.m$

Time used for remaining distance:

$12:00a.m$

$-\ 10:00a.m$

$02:00h$ ✓*B1*

Speed of the remaining journey

$Speed = \frac{D}{T}$

$= \frac{90Km}{2h}$

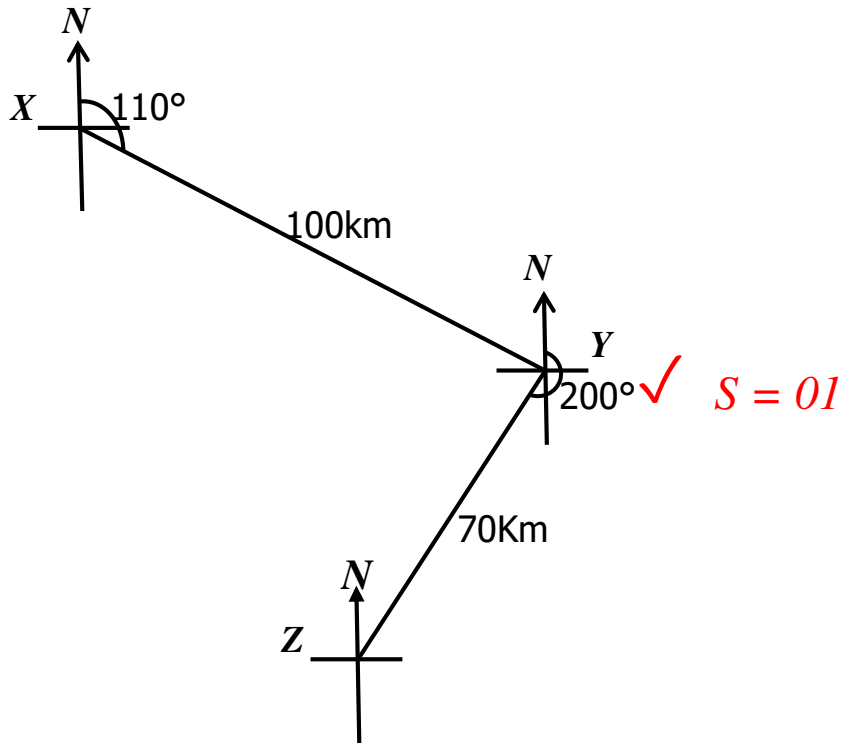
$= 45Km/h$ ✓*A1*

32. A ship sails 100km from port **X** on a bearing of 110° to port **Y**. It then sails 70Km from port **Y** on a bearing of 200° to port **Z**. Using scale of 1cm to represent 20km.

(a) Draw an accurate diagram showing the positions of three ports.

(*05 marks*)

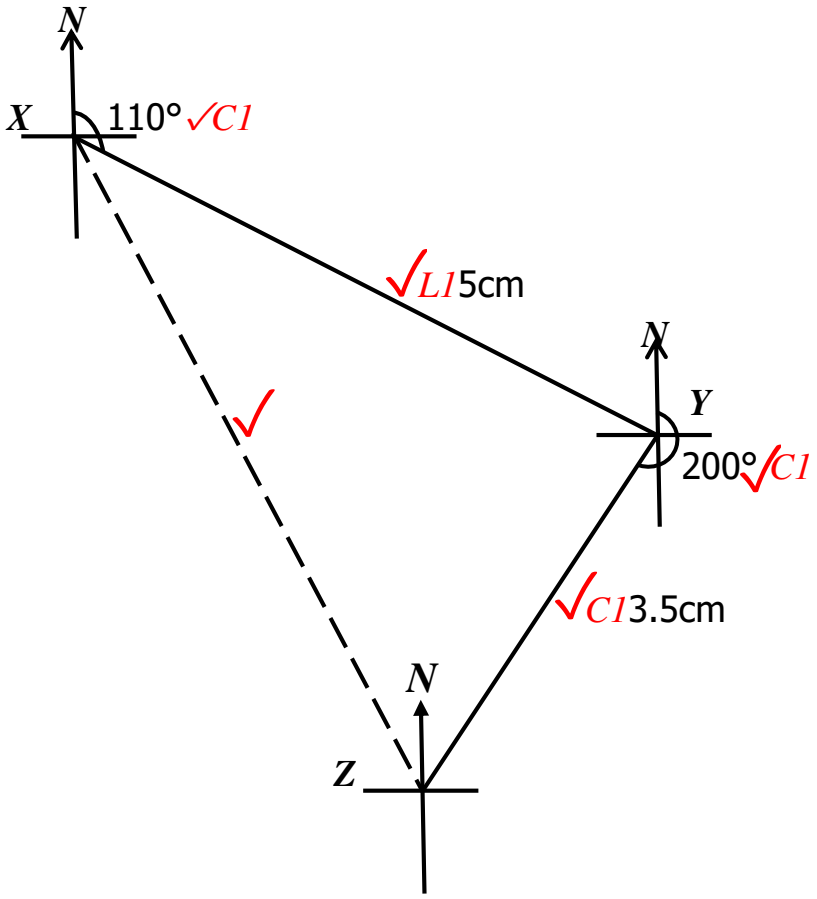
Sketch Diagram.



✓ *S = 01*

Accurate Diagram.

Distance X–Y	***Distance Y–Z***
20Km rept 1cm	*20Km rept 1cm*
100Km rept ($\frac{100Km}{20Km}$)*cm*	*70Km rept* ($\frac{70Km}{20Km}$)*cm*
= 5cm ✓	*= 3.5cm* ✓



(b) Find the distance XZ in Kilometres. (*01 mark*)

1 cm repts 20km

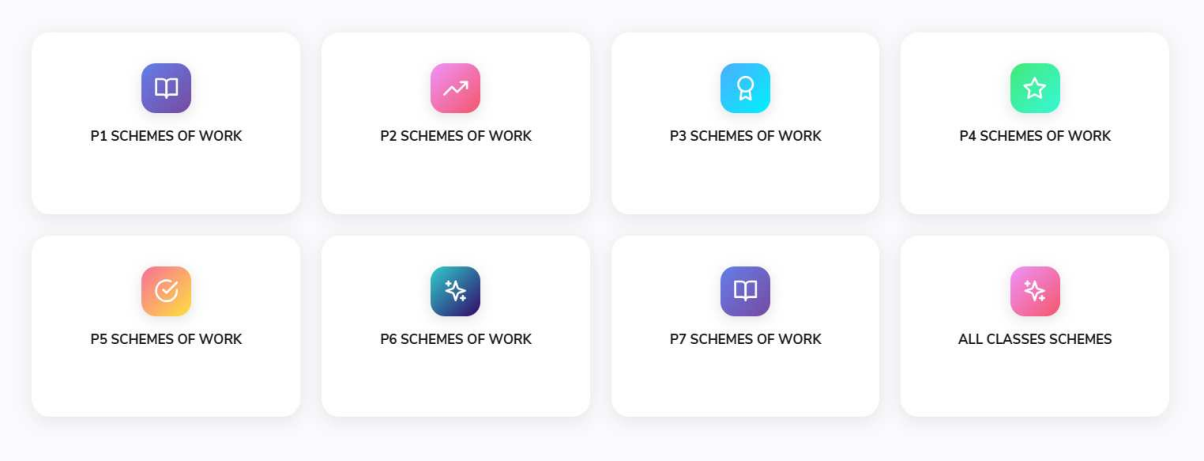
6cm rept (6 x 20) km

120km

∴ Distance XZ is 120km ✓*B1*

END

This document was downloaded from https://exoticnotes.com



Do you need more!

SCHEMES OF WORK for Primary (All Subjects)

Click
https://exoticnotes.com/schemes_of_work/primary/

For LESSON NOTES P.1 – P.7
Click
https://exoticnotes.com/notes/primary/

For Papers and Exams P.1 – P.7
Click
https://exoticnotes.com/papers/primary/

For Holiday Packages P.1 – P.7
Click
https://exoticnotes.com/holiday-work/primary/