

Subject :- Maths

Date \_\_\_\_\_  
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BLE 2081 (2025)

Bardagoriya Rural Municipality  
Kailali

Answer Sheet

by C.P. Sunar

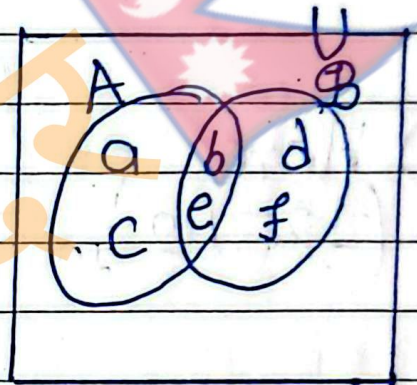
Q. N. 1 Ans

Sol<sup>n</sup>

(a) Here,

$$A = \{a, b, c, e\}$$

$$B = \{b, d, e, f\}$$



$$\therefore A \cap B = \{b, e\} \text{ Ans}$$

(b) The two proper subsets which can be made from  $A = \{a, b, c, e\}$  are:-  
 $\{\}, \{a\}$ ,

(c) To make set A and B disjoint, we should remove common elements of them.

The newly formed disjoint sets are:-

$$A = \{a, c\}$$

$$B = \{d, f\}$$

Q.N. 2. Ans →  
Sol<sup>n</sup>.

(a) ⇒ 12.742 is a rational number.

(b) Here,  
The scientific notation of 12.742 is  
=  $1.2742 \times 10^1$ .

(c) Here,  
 $(12.742)_{10} = 11000111000110_2$

proved

2	12.742	— 0	↑
2	6371	— 1	
2	3185	— 1	
2	1592	— 0	
2	796	— 0	
2	398	— 0	
2	199	— 1	
2	99	— 1	
2	49	— 1	
2	24	— 0	
2	12	— 0	
2	6	— 0	
2	3	— 1	
	1		

Q.N.3 Ans

Sol<sup>n</sup>

(a) Here,

Total quantity of milk = 45 litres

Ratio of pure milk and water = 2:7

Divide 45 litres in the ratio of 2:7,

Total parts =  $2 + 7 = 9$  parts

Value of 1 part =  $\frac{45}{9}$

= 5 litres

So,

pure milk =  $2 \times 5$  litres

= 10 litres

water =  $7 \times 5$  litres

= 35 litres

Thus,

10 litres of pure milk and 35 litres of water were in the mixture.

(b) Here,

The cost of 1 litre of milk = Rs. 105

For Rs. 1, we can bought =  $\frac{1}{105}$  litres of milk

Then,  
For Rs. 840, we can bought

$$= \frac{1}{105} \times 840 \text{ litres of milk}$$

$$= 8 \text{ litres of milk}$$

Thus,  
8 litres of milk can bought  
at Rs. 840.

(c) Here,

$$\text{Cost price of 45 l of milk} = \text{Rs. 4500}$$

$$\text{Cost price of 1 l of milk} = \frac{\text{Rs. 4500}}{45}$$

$$= \text{Rs. 100}$$

$$\text{Selling price of 1 l of milk}$$

$$= \text{Rs. 100} - 5\% \text{ of } 100$$

$$= \text{Rs. 100} - \frac{5 \times 100}{100}$$

$$= \text{Rs. 95}$$

$$\text{Total selling price of 50 l of milk}$$

$$= \text{Rs. 95} \times 50$$

$$= \text{Rs. 4750}$$

Now

$$\begin{aligned}\text{profit} &= \text{SP} - \text{CP} \\ &= \text{Rs. } 4750 - \text{Rs. } 4500 \\ &= \text{Rs. } 250.\end{aligned}$$

Thus

there was Rs. 250 profit for him in this transaction.

Q.N. 4 Ans,  
Sol<sup>n</sup>.

(a) It means that for every Rs. 100 deposited in the bank, the interest earned Rs. 10 in one year.

(b) Here,

Principal (P) = Rs. 80000

Time (T) = 4 years

Rate of interest (R) = 10% p.a.

Simple interest (I) = ?

We have,

$$I = \frac{PTR}{100}$$

$$\begin{aligned} &= \frac{80000 \times 4 \times 10}{100} \\ &= \text{Rs. } 32000 \end{aligned}$$

Thus,  
Ramesh got Rs. 32000 interest in  
4 years.

(c) Here,  
Interest for the first 2 years,  
 $P = \text{Rs. } 80000$   
 $T = 2 \text{ years}$   
 $R = 10\% \text{ p.a.}$   
 $I = ?$

We have,

$$\begin{aligned} I &= \frac{P \cdot T \cdot R}{100} \\ &= \frac{80000 \times 2 \times 10}{100} \\ &= \text{Rs. } 16000 \end{aligned}$$

Also,

Rs. 30000 withdraw after 2 years,  
Then,

$$\begin{aligned} P &= \text{Rs. } 80000 - \text{Rs. } 30000 \\ &= \text{Rs. } 50000 \end{aligned}$$

$$T = 2 \text{ years}$$

$$R = 10\%$$

$$I = ?$$

We have,

$$I = \frac{PTR}{100}$$

$$= \frac{50000 \times 2 \times 10}{100}$$

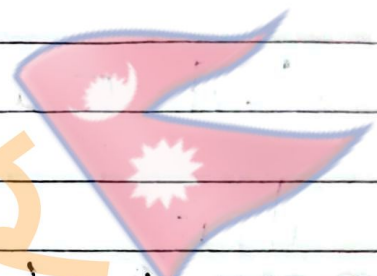
$$= \text{Rs. } 10,000$$

Now,

Total interest earned in 4 years,

$$= \text{Rs. } 16000 + \text{Rs. } 10000$$

$$= \text{Rs. } 26000 \text{ Ans}$$



(d) Here,

$$P = \text{Rs. } 80000$$

$$T = ?$$

$$R = 10\%$$

$$\text{Total Amount (A)} = 2 \text{ times of Rs. } 80000$$

$$= 2 \times \text{Rs. } 80000$$

$$= \text{Rs. } 160,000$$

We know,

$$A = P + I$$

$$\text{or, } I = A - P$$

$$= 160000 - 80000$$

$$= \text{Rs. } 80000$$

Now,

$$I = \frac{PTR}{100}$$

$$80000 = \frac{80000 \times T \times 10}{100}$$

$\therefore T = 10$  years.

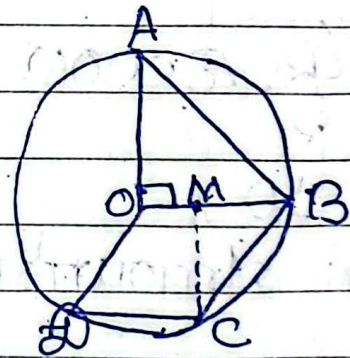
Thus,

Ramesh have to wait 10 years to get two times of the amount Rs. 80000.

Q. No. 5 Ans

Sol<sup>n</sup>.

(a) The area of circle having radius  $r$  is  
 $= \pi r^2$  ans



(b) Here,

In  $\triangle OAB$ ,

base =  $OB = 8m$

height =  $OA = 8m$

Now,

∴ The area of  $\triangle OAB$  is

$$= \frac{1}{2} \times \text{base} \times \text{height}$$

$$= \frac{1}{2} \times 8\text{m} \times 8\text{m}$$

$$= 32\text{m}^2 \text{ ans}$$

(c) Here,

In parallelogram  $OBCD$ ,

$$\text{base} = OB = 8\text{m}$$

$$\text{height} = CM = 6.5\text{m}$$

Now,

∴ The area of  $\square OBCD$  is

$$= \text{base} \times \text{height}$$

$$= 8\text{m} \times 6.5\text{m}$$

$$= 52\text{m}^2$$

Difference of the area of  $\triangle OAB$  and  $\square OBCD$  is

$$= 52\text{m}^2 - 32\text{m}^2$$

$$= 20\text{m}^2$$

Thus,

the area of  $\square OBCD$  is more than  $\triangle OAB$  by  $20\text{m}^2$ . ans

(d) Here,

Radius of circle ( $r$ ) = 8m

∴ Area of circle =  $\pi r^2$

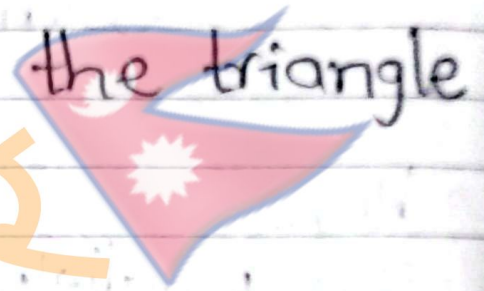
$$= \frac{22}{7} \times 8 \times 8$$

$$= 201.14 \text{ m}^2$$

Total area covered by the triangle and parallelogram is

$$= 32 \text{ m}^2 + 52 \text{ m}^2$$

$$= 84 \text{ m}^2$$



The area of the remaining part of the circular plot is

$$= 201.14 \text{ m}^2 - 84 \text{ m}^2$$

$$= 117.14 \text{ m}^2$$

Thus,

the area of the remaining circular plot is  $117.14 \text{ m}^2$  more than the area of the parallelogram and triangle.

Q. No. 6 Ans,  
Sol<sup>n</sup>.

(a) The factors of  $a^2 - b^2$  is  
 $= (a-b)(a+b)$

(b) Here,

$$\frac{2b}{a+2b} + \frac{8b^2}{a^2 - 4b^2}$$

$$= \frac{2b}{a+2b} + \frac{8b^2}{a^2 - (2b)^2}$$

$$= \frac{2b}{a+2b} + \frac{8b^2}{(a+2b)(a-2b)}$$

$$= \frac{2b \times (a-2b) + 8b^2}{(a+2b)(a-2b)}$$

$$= \frac{2ab - 4b^2 + 8b^2}{(a+2b)(a-2b)}$$

$$= \frac{2ab + 4b^2}{(a+2b)(a-2b)}$$

$$= \frac{2b(a+2b)}{(a+2b)(a-2b)}$$

$$= \frac{2b}{a-2b} \text{ Ans}$$

Q.N. 7 Ans

Sol<sup>n</sup>.

(a) Here,  $x^{a-b} \times x^{b-c} \times x^{c-a}$

$$= x^{a-b+b-c+c-a}$$

$$= x^0$$

$$= 1 \quad \underline{\underline{\text{Ans}}}$$

(b) Here,

$$3x^2 - 8x - 16 = 0$$

$$\text{or, } 3x^2 - (12 - 4)x - 16 = 0$$

$$\text{or, } 3x^2 - 12x + 4x - 16 = 0$$

$$\text{or, } 3x(x-4) + 4(x-4) = 0$$

$$\text{or, } (x-4)(3x+4) = 0$$

Either,

$$\Rightarrow x-4 = 0$$

$$\text{or, } x = 4$$

$$\Rightarrow 3x+4 = 0$$

$$\text{or, } 3x = -4$$

$$\text{or, } x = -\frac{4}{3}$$

$$\therefore x = 4, -\frac{4}{3} \quad \underline{\underline{\text{Ans}}}$$

Q.N. 8 Ans

Sol<sup>n</sup>

(a) In the given number line, the value of  $x$  is  $x \geq 1$ .

(b) Here,

$$2x - y = 5 \longrightarrow (i)$$

$$x - y = 1 \longrightarrow (ii)$$

From eq<sup>n</sup>. (i)

$$y = 2x - 5$$

$x$	0	1	2	3
$y$	-5	-3	-1	1

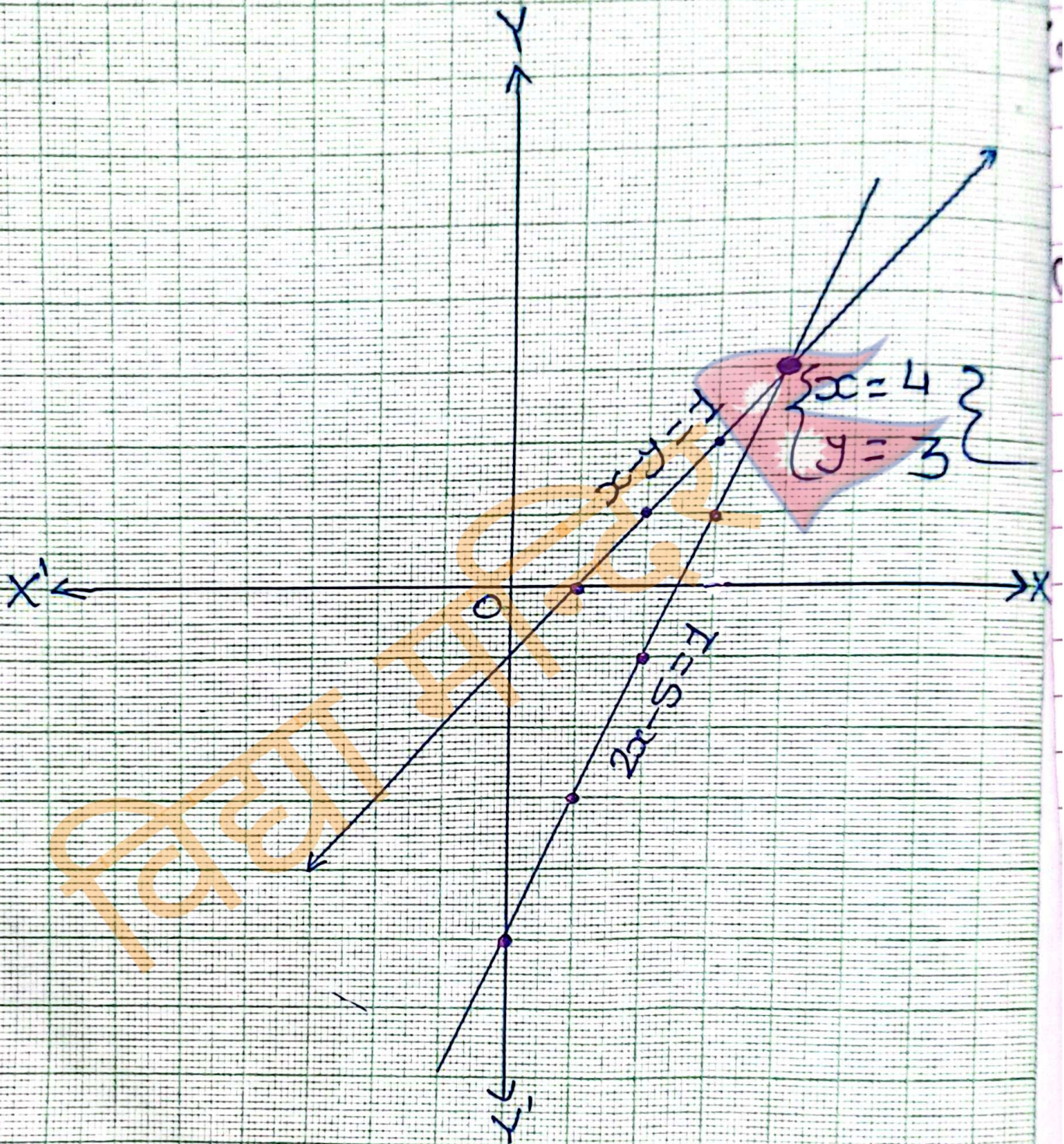
From eq<sup>n</sup>. (ii)

$$y = x - 1$$

$x$	1	2	3	4
$y$	0	1	2	3

From graph,

The value of  $x$  and  $y$  are 4 and 3 resp.



Q.N. 9 Ans,

Sol<sup>n</sup>,

(a) The name of the solid object made by the given net is

(b) Here,

$$\angle NPQ + \angle PQN = 180^\circ$$

[Co-interior]

$$\therefore 75^\circ + \angle PQN = 180^\circ$$

$$\therefore \angle PQN = 180^\circ - 75^\circ$$

$$\therefore \angle PQN = 105^\circ$$

Again,

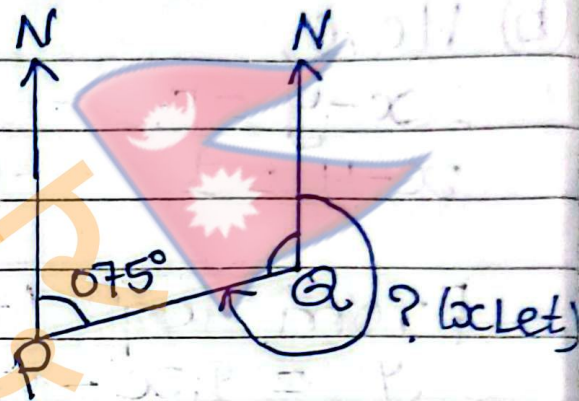
$$105^\circ + x = 360^\circ \quad [\because \text{Angle at a point}]$$

$$\therefore x = 360^\circ - 105^\circ$$

$$\therefore x = 255^\circ$$

Thus,

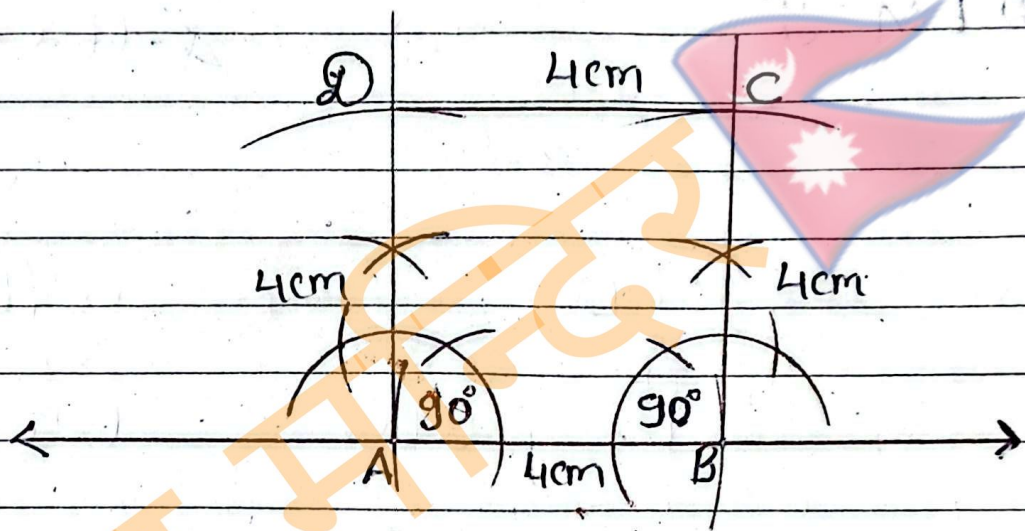
the bearing p from the point Q is  $255^\circ$ .



(c) Equilateral triangles has tessellation because they have equal sides and angles and six of them fit perfectly around a point without leaving gaps.

10(b) Here,

Construction of a square ABCD



We construct a square ABCD.

Q.N. 11 Ans

(a) Sol<sup>n</sup>

Here,

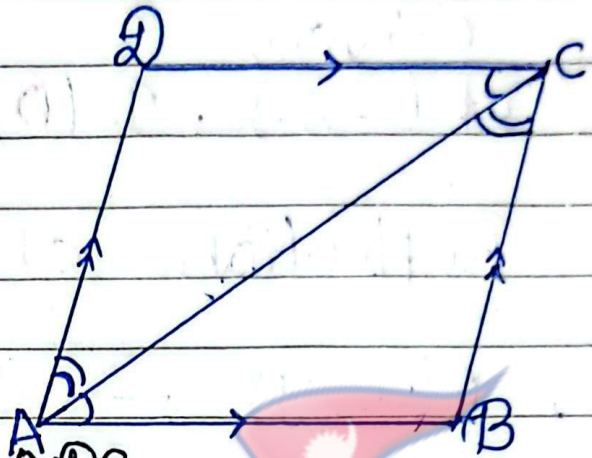
Given :-  $AD \parallel BC$

$DC \parallel AB$

$AD = BC$

$DC = AB$

To prove :-  $\triangle ABC \cong \triangle ADC$



Proof:

1.  $\angle BAC = \angle ACD$  [  $\because$  Alternate angles ]
2.  $\angle CAD = \angle ACB$  [  $\because$  Alternate angles ]
3.  $AC = AC$  [  $\because$  Common side ]

Using Angle-Side-Angle (ASA) congruency property,

$$\triangle ABC \cong \triangle ADC$$

proved

(b) Here,

Given,

$$A(1, 2), B(2, 0), C(3, 3)$$

Reflection on X-axis,

$$P(x, y) \longrightarrow P'(x, -y)$$

Now,

$$A(1, 2) \longrightarrow A'(1, -2)$$

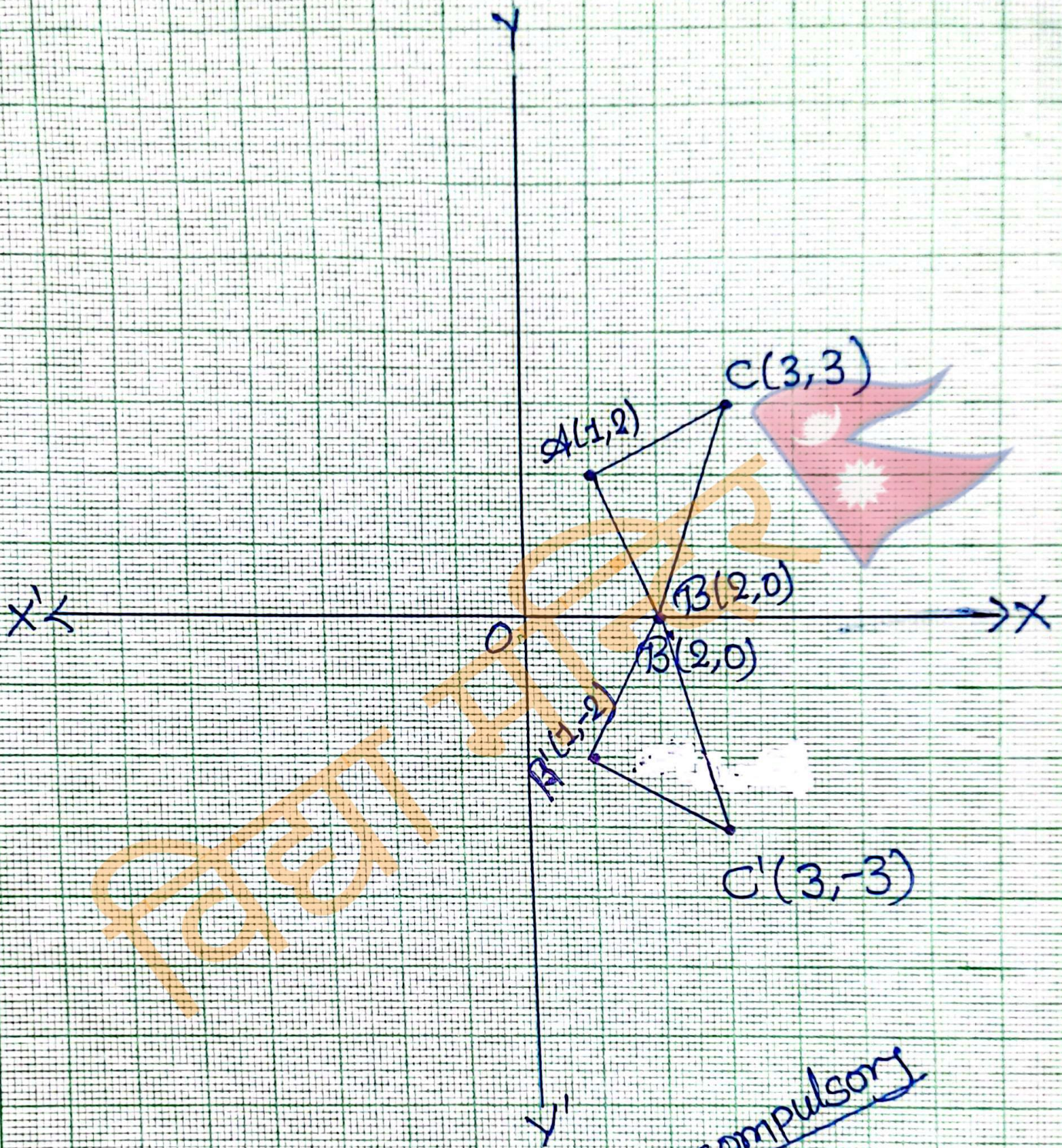
$$B(2, 0) \longrightarrow B'(2, 0)$$

$$C(3, 3) \longrightarrow C'(3, -3)$$

In graph

Q.N. 11 (b) ans

 = 1 unit



Use pencil compulsory

Q. N. 12. Ans.

(a)  $80^\circ$

Here,

$$\begin{aligned}\text{Total expenditure of Ramesh is} \\ &= \text{Rs} (1000 + 4000 + 2000 + 3000) \\ &= \text{Rs. } 10,000\end{aligned}$$

Let,

$$\text{Rs. } 10000 = 360^\circ$$

$$\text{Rs. } 1 = \frac{360^\circ}{10000} = 0.036^\circ$$

Now,

$$\begin{aligned}\text{Expenditure on Transportation in degree} \\ &= 1000 \times 0.036^\circ \\ &= 36^\circ\end{aligned}$$

$$\begin{aligned}\text{Expenditure on education in degree} \\ &= 4000 \times 0.036^\circ \\ &= 144^\circ\end{aligned}$$

$$\begin{aligned}\text{Expenditure on health in degree} \\ &= 2000 \times 0.036^\circ \\ &= 72^\circ\end{aligned}$$

$$\begin{aligned}\text{Expenditure on clothes in degree} \\ &= 3000 \times 0.036^\circ \\ &= 108^\circ\end{aligned}$$

Showing it in pie-chart,



xxxx xxxx	Transportation
--- ---	Education
+++ +++	Health
ooo ooo	Clothes

(b) Here, Total expenditure = Rs. 10000

Average expenditure = Rs. 2500

No. of categories ( $N$ ) = 4

To make the average Rs. 2000,

Now,

New total expenditure = Rs. 2000  $\times$  4

= Rs. 8000

Amount to be reduced = Rs. 10000 - Rs. 8000

= Rs. 2000

Thus,

Rs. 2000 should be subtracted from education.

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☸ Thank You ☸

# बर्दगोरिया गाउँपालिका

आधारभूत तह परीक्षा (Basic Level Examination) 2081 (2025)

कक्षा-८ (Grade 8)

पूर्णाङ्क : ५०

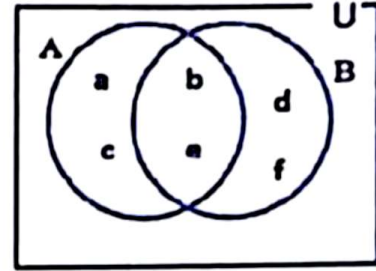
समय: २:०० घण्टा

विषय: अनिवार्य गणित (Compulsory Mathematics)

सबै प्रश्नहरू अनिवार्य छन् । (Attempt all the questions.)

1) दिइएको भेन चित्र अवलोकन गर्नुहोस् । Observe the given Venn-diagram.

A) समूह A र समूह B को प्रतिच्छेदित समूहमा कुन कुन सदस्य पर्दछन् ?  
What are the elements of intersection of set A and set B?  
1 mark



- B) समूह  $A = \{a, b, c, e\}$  वाट वन्ने कुनै दुई ओटा उपयुक्त उपसमूहहरू लेख्नुहोस् । Write any two proper subsets which can be made from set  $A = \{a, b, c, e\}$ . 1 mark
- C) समूह A र समूह B खट्टिएका समूह हुन् । यिनलाई अलग्गिएका समूहहरू बनाउन के गर्नुपर्छ ? नयाँ बनेका नखट्टिएका समूहहरू लेख्नुहोस् । Set A and set B are overlapping set. What should be done to make them disjoint sets? Write the newly formed disjoint sets. 1 mark

2) पृथ्वीको व्यास 12742 km छ । The diameter of the earth is 12742 km.

- A) 12742 आनुपातिक वा अनानुपातिक कुन सङ्ख्या हो ? लेख्नुहोस् । Is 12742 a rational or irrational number ? write it. 1 mark
- B) 12742 लाई वैज्ञानिक सङ्केतमा लेख्नुहोस् । Write 12742 in scientific notation. 1 mark
- C) प्रमाणित गर्नुहोस् (Prove that) :  
 $12742 = 11000111000110_2$  2 marks

3) दुध डेरीवाट किनेको 45 लिटर दूधमा पानी र दूधको अनुपात 2:7 छ । The ratio of water and milk in 45 liter milk bought from a milk diary is 2:7.

A) उक्त मिश्रणमा कति कति लिटर शुद्ध दूध र पानी रहेछ ? पत्ता लगाउनुहोस् । How many liters of pure milk and water were in that mixture? Find it. 2 marks

B) यदि एक लिटर मिश्रित दूधको मूल्य रु. 105 भए, रु. 840 मा कति लिटर दूध किन्न सकिन्छ ? पत्ता लगाउनुहोस् । If the cost of one liter mixture of the milk is Rs. 105, how many liters of milk can be bought at Rs 840? Find it. 2 marks

C) एकजना पसलेले 45 लिटर दूध रु. 4500 मा किनेर ल्याएछन् । सो दूधमा 5 लिटर पानी थपी किनेकै दरमा 5% छुट दिई बेचेछन् । उक्त कारोबारमा उनलाई नाफा वा घाटा के भयो ? गणना गरी पत्ता लगाउनुहोस् । A shopkeeper bought 45 liters of milk for Rs. 4500. He added 5 liters of water to the milk and sold it at 5% discount on the rate of cost price. Was there profit or loss for him in this transaction ? Find it by calculation. 1 mark

4) रमेशले वार्षिक 10% साधारण व्याजदरले 4 वर्षका लागि रु. 80,000 बैङ्कमा जम्मा गर्छन् । Ramesh deposits Rs. 80,000 in a bank for 4 years at the rate of 10% per annum simple interest.

A) 10% वार्षिक व्याजदर भनेको के हो ? What is the meaning of 10% rate of interest per annum? 1 mark

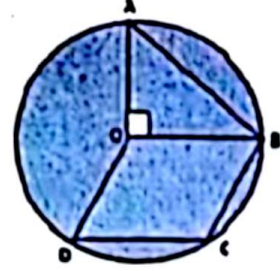
B) रमेशले 4 वर्षमा जम्मा कति व्याज पाउनेछन् ? पत्ता लगाउनुहोस् । How much total interest would Ramesh get in 4 years? Find it. 1 mark

C) रमेशले 2 वर्षपछि बैङ्कमा जम्मा गरेको रकमबाट रु.30,000 फिर्केको भए 4 वर्षको अन्त्यमा कति व्याज पाउने थिए ? पत्ता लगाउनुहोस् । If Ramesh withdrew Rs. 30,000 from the amount deposited at the bank after 2 years, how much interest would he get at the end of 4 years? Calculate it. 1 mark

D) रमेशले सोही व्याजदरमा रु. 80,000 को दुई गुणा मिश्रधन प्राप्त गर्न कति समय कुनुपर्ला ? गणना गर्नुहोस् । How long will Ramesh have to wait to get two times the amount of Rs. 80,000 at the same rate of interest? Find it. 2 marks

5) रबिनाले 8 मिटर अर्धव्यास भएको वृत्ताकार जग्गामा समकोणी त्रिभुज र समानान्तर चतुर्भुज आकारमा दुई ओटा आकृतिहरू चित्रमा देखाएजस्तै कोरिन् ।

Rabina has drawn two plane figures in the shape of a right angled triangle and a parallelogram in a circular plot with a radius of 8 meter as shown in the figure.



A) अर्धव्यास  $r$  भएको वृत्तको क्षेत्रफल पत्ता लगाउने सूत्र लेख्नुहोस् । Write the formula for finding the area of circle having radius 'r'. 1 mark

B) समकोणी  $\Delta OAB$  को क्षेत्रफल पत्ता लगाउनुहोस् । जहाँ  $O$  वृत्तको केन्द्रविन्दु हो । Find the area of right angled  $\Delta OAB$ , where  $O$  is the centre of the circle. 1 mark

C) यदि समानान्तर चतुर्भुज  $OBCD$  को उचाइ (CM) = 6.5 मिटर भए समानान्तर चतुर्भुजको क्षेत्रफल र त्रिभुजको क्षेत्रफलमा कुन कतिले बढी हुन्छ ? गणना गर्नुहोस् । If the height (CM) of the parallelogram  $OBCD$  is 6.5 meter, whose area is greater in parallelogram and triangle by how much? Calculate it. 2 marks

D) उक्त वृत्ताकार जग्गामा बाँकी रहेको भागको क्षेत्रफल समानान्तर चतुर्भुज र त्रिभुजकार आकृतिले ओगटेको क्षेत्रफल भन्दा कतिले बढी छ ? By how much is the area of the remaining part of the circular plot more than the area covered by the parallelogram and the triangle? 1 mark

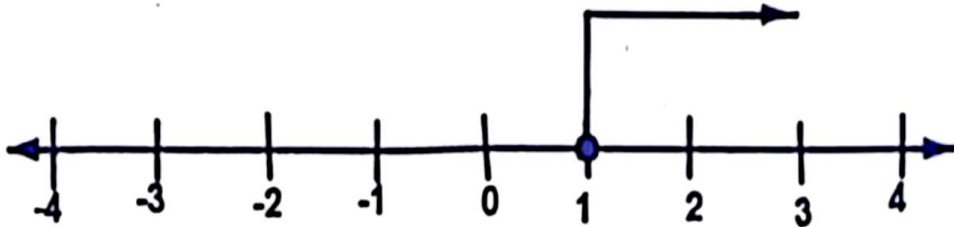
6) A)  $a^2 - b^2$  को गुणनखण्डहरू लेख्नुहोस् । Write the factors of  $a^2 - b^2$ . 1 mark

B) सरल गर्नुहोस् (Simplify) :  $\frac{2b}{a+2b} + \frac{8b^2}{a^2-4b^2}$  2 marks

7) A) सरल गर्नुहोस् (Simplify):  $x^{a-b} \times x^{b-c} \times x^{c-a}$  2 marks

B) हल गर्नुहोस् (Solve):  $3x^2 - 8x - 16 = 0$  2 marks

8) A) दिइएको संख्या रेखामा  $x$  को मान तलकामध्ये कति हुन्छ ? लेख्नुहोस् । Which of the following is the value of  $x$  in the given number line? Write it. 1 mark

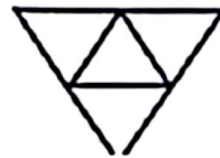


I)  $x > 1$  II)  $x < 1$  III)  $x \geq 1$  IV)  $x \leq 1$

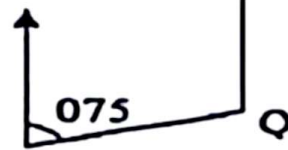
B) लेखाचित्रको प्रयोग गरी हल गर्नुहोस् । (Solve by using graph). 2 marks

$$2x - y = 5 \text{ र } x - y = 1$$

9) A) दिइएको जालीबाट बन्ने ठोसवस्तुको नाम लेख्नुहोस् । Write the name of the solid object made by the given net. 1 mark



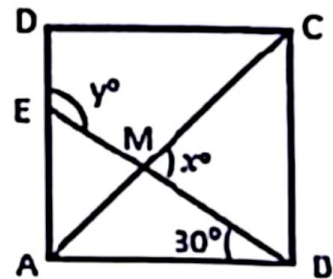
B) दिइएको चित्रमा, बिन्दु P बाट Q को दिशास्थिति  $075^\circ$  छ । बिन्दु Q बाट P को दिशास्थिति कति हुन्छ ? पत्ता लगाउनुहोस् ।



In the given figure, the bearing of Q from point P is  $075^\circ$ . What is the bearing of P from the point Q ? Find it. 2 marks

C) समबाहु त्रिभुजको टेसेलेसन किन हुन्छ ? व्याख्या गर्नुहोस् । Why equilateral triangle has tessellation ? Explain it. 2 marks

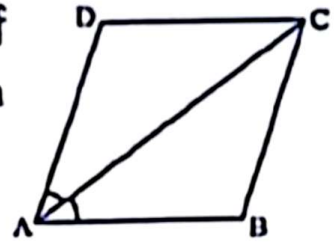
10) सँगैको चित्रमा, एउटा भुजाको लम्बाइ 4 से.मि. भएको वर्ग ABCD छ । जहाँ,  $\angle ABE = 30^\circ$ ,  $\angle BMC = x^\circ$  र  $\angle DEM = y^\circ$  छन् । In the adjoining figure, a square ABCD having the length of a side is 4 cm. Where,  $\angle ABE = 30^\circ$ ,  $\angle BMC = x^\circ$  and  $\angle DEM = y^\circ$ .



A)  $x$  र  $y$  को मान पत्ता लगाउनुहोस् । Find the values of  $x$  and  $y$ . 2 marks

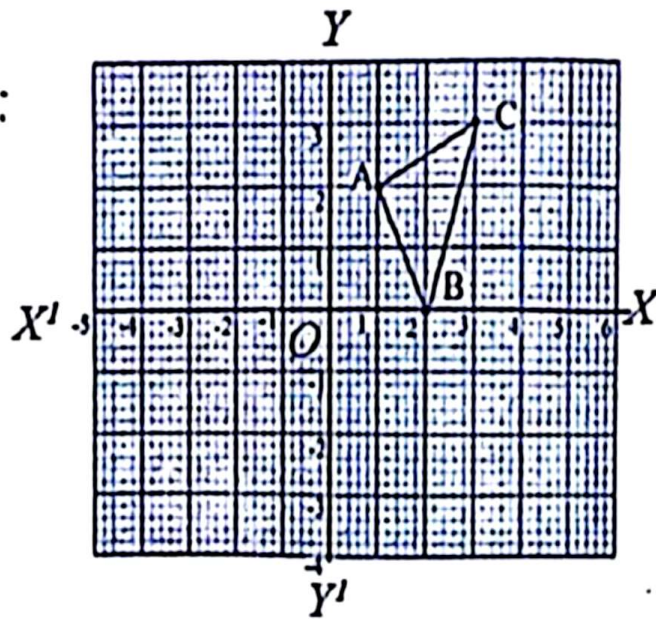
B) कम्पासको प्रयोग गरी 4 से.मि. लम्बाइ भएको वर्ग ABCD को रचना गर्नुहोस् । Construct the square ABCD of length 4 cm by using a compass. 3 marks

- 11) A) चित्रमा समानान्तर चतुर्भुज ABCD मा विकर्ण AC छ । In the figure, a parallelogram ABCD has a diagonals AC.



प्रमानणित गर्नुहोस् (Prove that) :  $\Delta ABC \cong \Delta ADC$  2 marks

- B)  $\Delta ABC$  लाई X- अक्षमा परावर्तन गरी प्राप्त प्रतिविम्ब त्रिभुजलाई लेखचित्रमा खिच्नुहोस् । साथै प्रतिविम्ब  $\Delta A'B'C'$  का शीर्षविन्दुहरूको निर्देशाङ्कहरू लेख्नुहोस् । Reflect the given  $\Delta ABC$  about X-axis and draw the image triangle so obtained the graph. Also write the coordinates of image  $\Delta A'B'C'$ . 3 marks



- 12) रमेशको मासिक खर्चको विवरण तल दिइएको छ । The monthly expenditure of Ramesh is given below.

खर्च विवरण (Description of Expenditure)	खर्च रकम (रु.) मा (Amount of Expenditure in Rs.)
यातायात (Transportation)	1000
शिक्षा (Education)	4000
स्वास्थ्य (Health)	2000
लत्ताकपडा (Clothes)	3000

- A) माथिको तथ्याङ्कलाई वृत्त चित्रमा प्रस्तुत गर्नुहोस् । Represent the above information in the pie-chart. 2 marks

B) माथि दिइएको तथ्याङ्कको औसत खर्च रु. 2500 रहेछ । यदि औसत खर्च रु.2000 बनाउने हो भने शिक्षामा कति रकम घटाउनुपर्ला ? हिसाव गर्नुहोस् । The average expenditure of the given data is Rs. 2500. If the average expenditure would be Rs. 2000, how much amount could be subtracted in Education? Calculate it. 1 mark

-The End-