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BLE Maths 2081
Waling Municipality, Syangja
Answer Sheet

Q.N. 1 Ans.

⇒ Sol^{n}.

(a) The no. of elements of set A and set B are equal and $A = B$, in such a case we say that A is an improper subset of B and we write it as $A \subseteq B$.

(b) Here,
$A = \{m, n, p, q\}$
The improper subset of A is $\{m, n, p, q\}$

(c) Here,
$A = \{m, n, p, q\}$
$B = \{x, y\}$
Then, the set A and set B are disjoint sets because there are no any common elements.

Q.N. 2 Ans

Sol^n.

(a) A 10% discount means that the price of an item or service is reduced by 10 percent of its original price.

(b) Here,
Marked price (MP) = Rs. 400
Discount % (D %) = 10%
Now,
Discount amount = 10% of Rs. 400

$$= \frac{10}{100} \times Rs.\ 400$$

$$= Rs.\ 40$$

(c) Here,
cost price (CP) = ?
selling price (SP) = Rs. 400 − 10% of Rs. 400
= Rs. 400 − Rs. 40
= Rs. 360
profit amount = Rs. 40
We know that,
profit = SP − CP

or, Rs. 40 = Rs. 360 − CP

or, CP = Rs. 360 − Rs. 40

∴ CP = Rs. 320

Thus,
the cost price of the watch is Rs. 320.

Q.N. 3 Ans>
Sol^n:

(a) Here,
principal (P) = Rs. 4,00,000
Time (T) = 2 years
Rate of interest (R) = Rs. 10 interest p.a. for Rs. 100
= 10%.

Thus,
Radhika deposited the money at a rate of 10%.

(b) Here,
Interest (I) = $\frac{PTR}{100}$

= $\frac{400000 \times 2 \times 10}{100}$

= RS. 80000

Thus,
Radhika get RS. 80,000 interest for 2 years.

(c) Here,
The age of elder daughter = 10 years
The age of younger daughter = 6 years
Now,
The ratio of their ages is

$$= \frac{10}{6}$$

$$= \frac{5}{3}$$

= 5 : 3

Divide RS. 80000 in the ratio of 5 : 3;
Total parts = 5 + 3 = 8 parts
Value of 1 part = $\frac{80000}{8}$

= RS. 10000

So,
The elder daughter get = 5 × RS. 10000
= RS. 50000
The younger daughter get = 3 × RS. 10000
= RS. 30000

Thus, the elder daughter gets Rs 50000 and younger daughter gets Rs. 30000 from the interest.

Q.N. 4 Ans

Soln.

(a) Here,

$25;92,000 \text{ sec} = 2.592 \times 10^6 \text{ sec}$

The correct scientific notation of 25,92,000 sec is 2.592×10^6 sec.

(b) Here

$(2592)_{10} = (40132)_5$ Ans

5	2592	— 2 ↑
5	518	— 3
5	101	— 1
5	20	— 0
5	4	— 4
	0	

(c) Here,

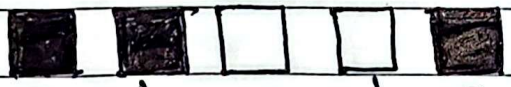
■ = 1

□ = 0

$(25)_{10} = (11001)_2$

2	25	−1
2	12	−0
2	6	−0
2	3	−1
2	1	−1
	0	

Now,



(d) Here,

$0.\overline{34}$

Let, $x = 0.3434....$

Multiplying both sides by 100,

$100 \times x = 0.3434... \times 100$

or, $100x = 34.34...$

or, $100x = 34 + 0.34...$

or, $100x = 34 + x$

or, $100x - x = 34$

or, $99x = 34$

or, $x = \frac{34}{99}$

$\therefore 0.\overline{34} = \frac{34}{99}$ Ans

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Q.N. 5 Ans,

Soln.

(a) The formula to find the circumference of circle is

$$C = 2\pi r$$

Where,

r = radius of circle

$\pi = \frac{22}{7}$

(b) Here,

$C = 132$ m

$r = ?$

We have,

$C = 2\pi r$

or, $132 = 2\pi r$

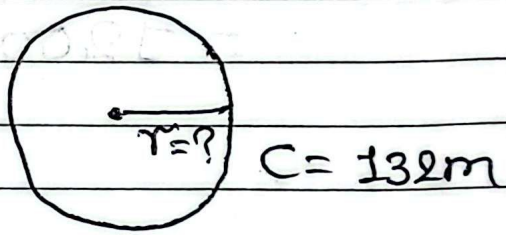
or, $r = \frac{132}{2\pi}$

or, $r = \frac{132}{2 \times \frac{22}{7}}$

or, $r = \frac{132}{44} \times 7$

$\therefore r = 21$ m

Thus, the radius of the given circular ground is 21 m



Here,

(c) The area of the circular ground is

$$A = \pi r^2$$
$$= \frac{22}{7} \times 21^2$$
$$= \frac{22}{7} \times 21 \times 21$$
$$= 1386 m^2$$

Here,

(d) The area of a rectangular pond is

$$A = 40m \times 30m$$
$$= 1200 m^2 \text{ Ans}$$

Q.N. 6 Ans

Soln.

(a) Here,

$$(2x+1)^2 = (2x)^2 + 2 \times (2x) \times 1 + 1^2$$
$$= 4x^2 + 4x + 1 \text{ Ans}$$

(b) Here,

$$\frac{x^2 - y^2}{x+y} \div \frac{x-y}{x+y}$$

$$= \frac{x^2-y^2}{x+y} \times \frac{x+y}{x-y}$$

$$= \frac{(x+y)(x-y)}{(x+y)} \times \frac{(x+y)}{(x-y)}$$

$$= x+y \quad \text{Ans}$$

Q.N. 7 Ans

Sol^{n}.

(a) We can express the above information in the form of equation as;

$$x+y = 8$$
$$x-y = 6$$

(b) Here,

Given eq^{n}.;

$x+y = 8 \longrightarrow (1)$

$x-y = 6 \longrightarrow (2)$

From eq^{n}. (1),

$y = 8-x$

x	0	1	2	3
y	8	7	6	5

From eqn. (2),

$y = x - 6$

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

From graph,
The value of x and y are 7 and 1 resp.

Q.N. 8 Ans

Sol^n.

(a) Here,

$5x - 20, x^2 - 16$

First expression $= 5x - 20$

$= 5(x - 4)$

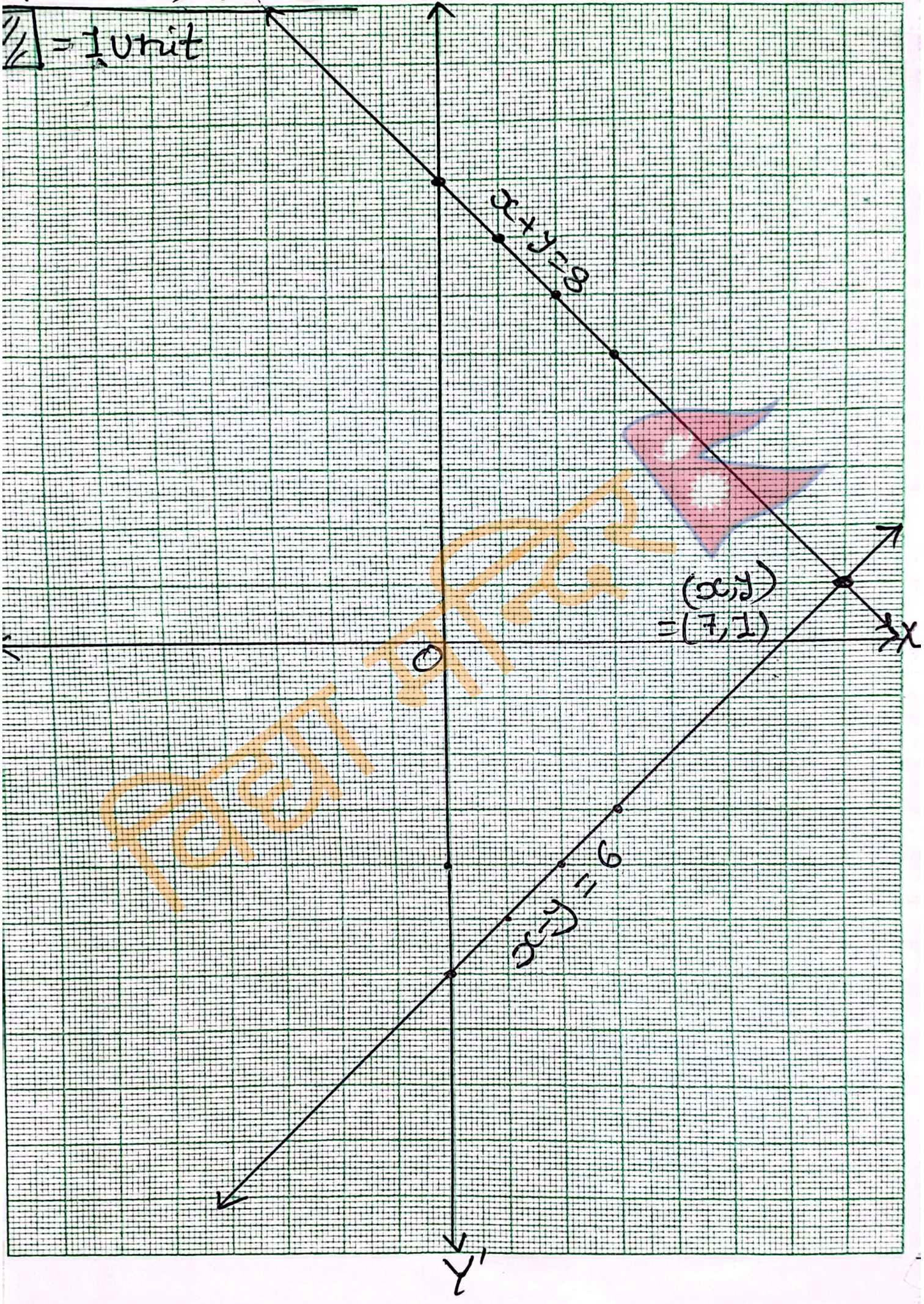
Second expression $= x^2 - 16$

$= x^2 - 4^2$

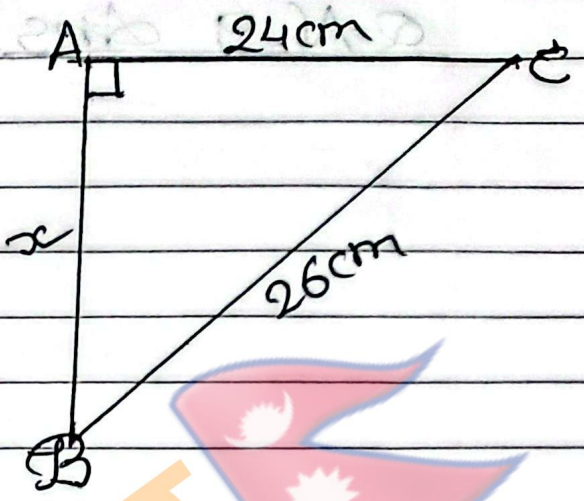
$= (x + 4)(x - 4)$

$\therefore$ HCF $= (x - 4)$ Ans

Q.N. 7(b) Ans



(b) Here,



In ΔABC,

$p = AB = x$

$b = AC = 24cm$

$h = BC = 26cm$

~~Now,~~

We know that,

$h^2 = p^2 + b^2$

or, $26^2 = x^2 + 24^2$

or, $x^2 = 26^2 - 24^2$

or, $x^2 = 676 - 576$

or, $x = \sqrt{100}$

$\therefore x = 10cm$

Thus,

the value of x is 10cm.

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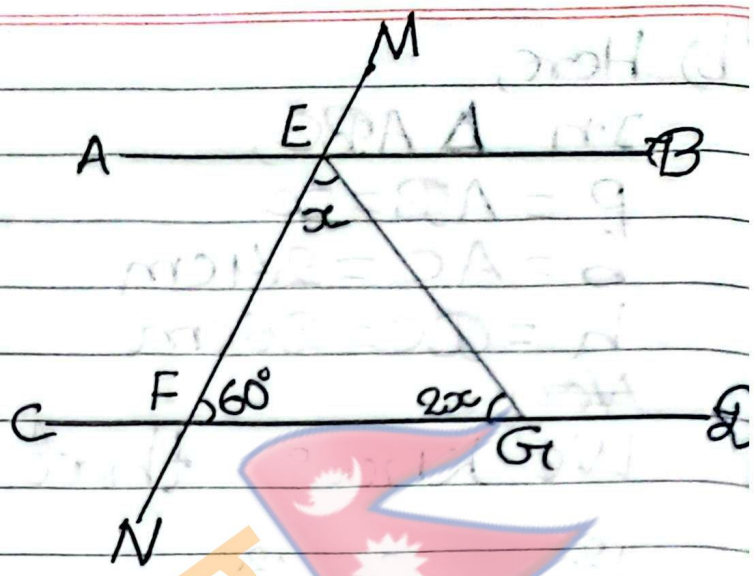
Q.N. 9 Ans:-



Soln,

(a) Here,
$\angle BEF$ and $\angle CFE$ is a pair of alternate angle.

(b) Here, In ΔEFG
$\angle EFG = 60°$
$\angle FEG = x$
$\angle EGF = 2x$
Now,
$x + 2x + 60° = 180°$ [$\because$ Sum of interior angle of ΔEFG]
or, $3x = 180° - 60°$
or, $3x = 120°$

or, $x = \frac{120}{3}$

$\therefore x = 40°$

Also,

$2x = 2 \times 40° = 80°$

So,

$\angle EFG = 60°$

$\angle FEG = 40°$

$\angle EGF = 80°$

Thus, In $\triangle EFG$, all the angles are less than 90°. So $\triangle EFG$ is acute-angled- triangle.

(c) Here,

$AB \parallel CD$

$\angle BEF = \angle EGF = 2x$ [$\because$ Alternate angle]

$= 2 \times 40°$

$= 80°$

Thus,

At value of $\angle BEF$ is 80° then the line segments AB and CD will be parallel.

Q.N. 10 Ans

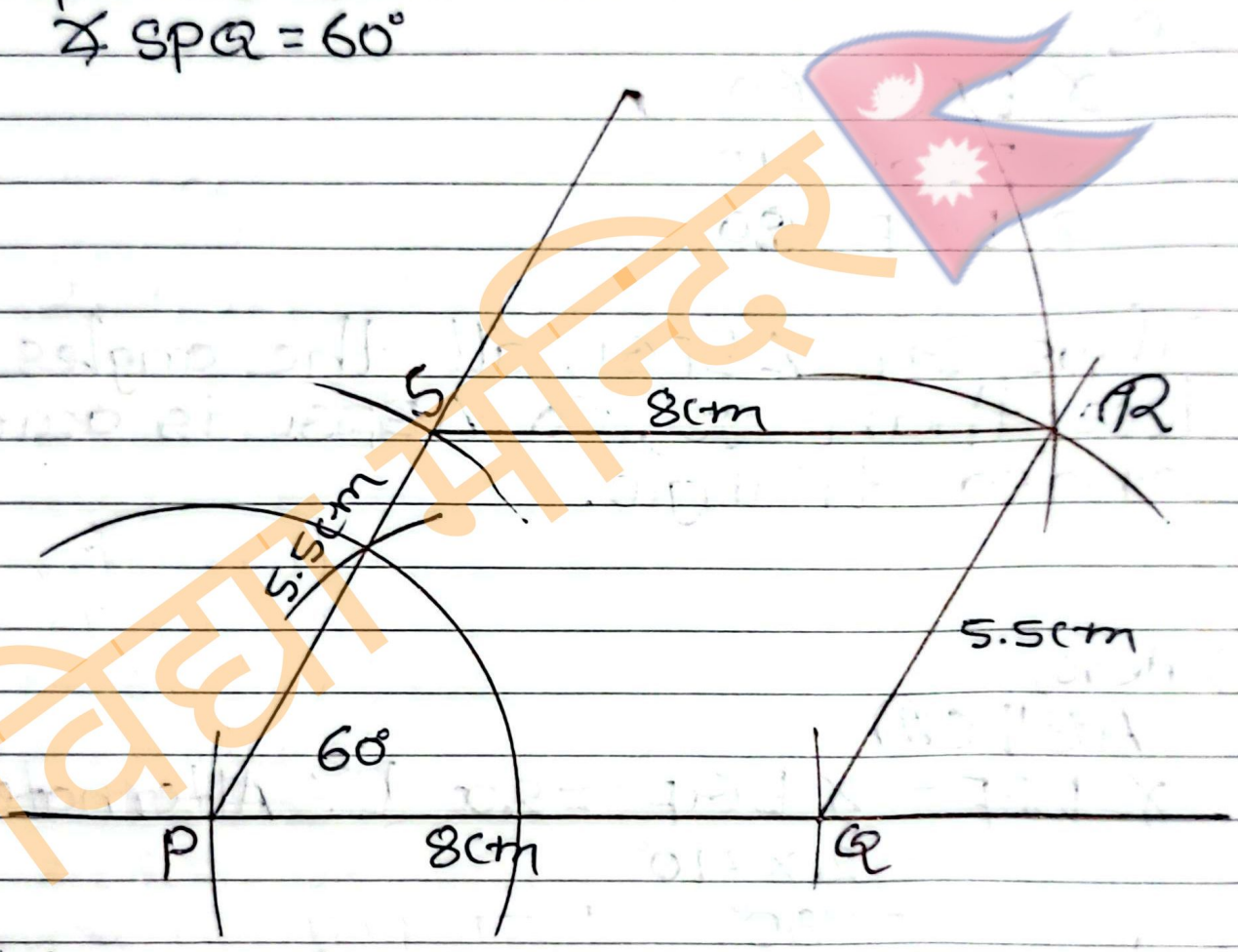
Sol:

(a) Here,

$PQ = 8cm$

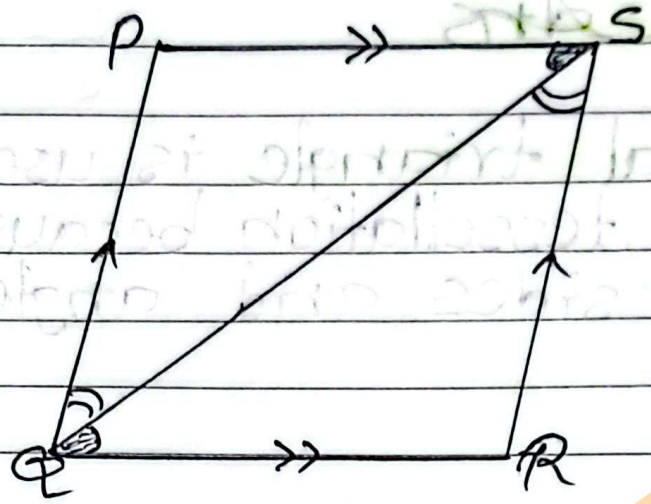
$PS = 5.5cm$

$\angle SPQ = 60°$



We construct □PQRS.

(b) Here,



Given :- In a parallelogram PQRS with ΔPQS and ΔQRS [PQ||SR, PS||QR]

To prove :- $\Delta PQS \cong \Delta QRS$

Proof :

1. $\angle PSQ = \angle SQR$ [$\because$ Alternate angle]
2. $\angle PQS = \angle QSR$ [$\because$ Alternate angle]
3. QS = QS [$\because$ common side]

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

$\Delta PQS \cong \Delta QRS$.

proved

Q.N. 11 Ans

Sol^n.

(a) Equilateral triangle is used to make regular tessellation because it has all the sides and angles are equal

(b) Here,
Given coordinates,
P(4,3), Q(7,3) and R(4,-3)

Reflection on y-axis

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

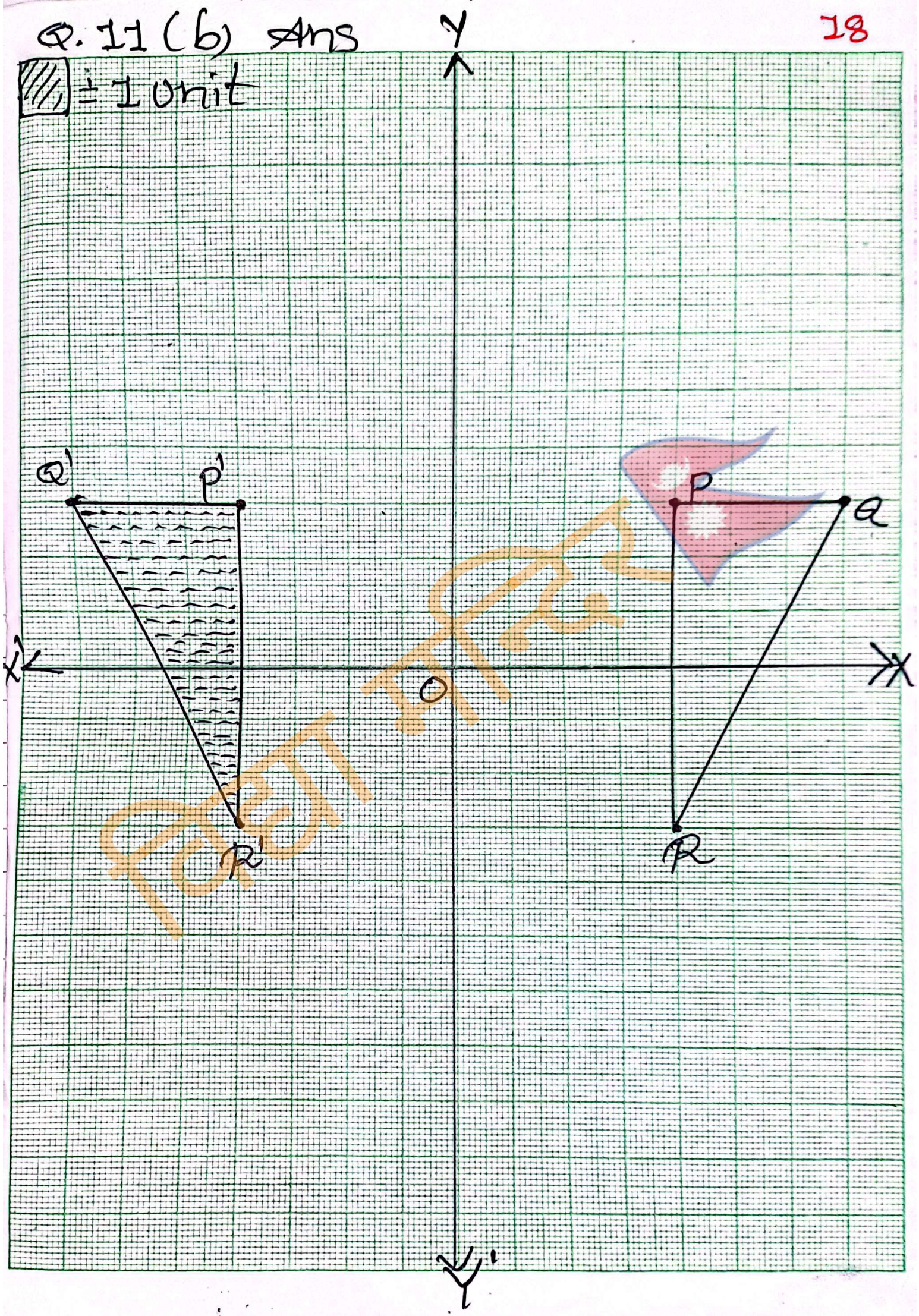
Then,
$P(4,3) \longrightarrow P'(-4,3)$
$Q(7,3) \longrightarrow Q'(-7,3)$
$R(4,-3) \longrightarrow R'(-4,-3)$

Showing it a graph

In Graph paper

Q. 11 (b) Ans

▨ = 1 unit



(c) Here;
Given points,
A(4,1), B(4,5)
Then,
$A(x_1, y_1) = A(4,1)$

$B(x_2, y_2) = B(4,5)$
We know that,

The distance between point A and B is

$$d = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$$

$$= \sqrt{(4-4)^2 + (1-5)^2}$$

$$= \sqrt{0^2 + (-4)^2}$$

$$= \sqrt{16}$$

$$= 4 \text{ units}$$

Q.N. 12. Ans

Sol^{n}.

(a) Here,

The monthly average expenditure of Anup's Family is

$$= \frac{2000 + 2500 + 3000 + 2500}{4}$$

$$= \frac{10000}{4}$$

$$= RS.\ 2500$$

(b) Here,

Total expenditure of Anup's Family = RS. 10000

Let,

$$RS.\ 10000 = 360^{\circ}$$

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

Now,

Expenditure on food $= 2000 \times 0.036^{\circ}$

$= 72^{\circ}$

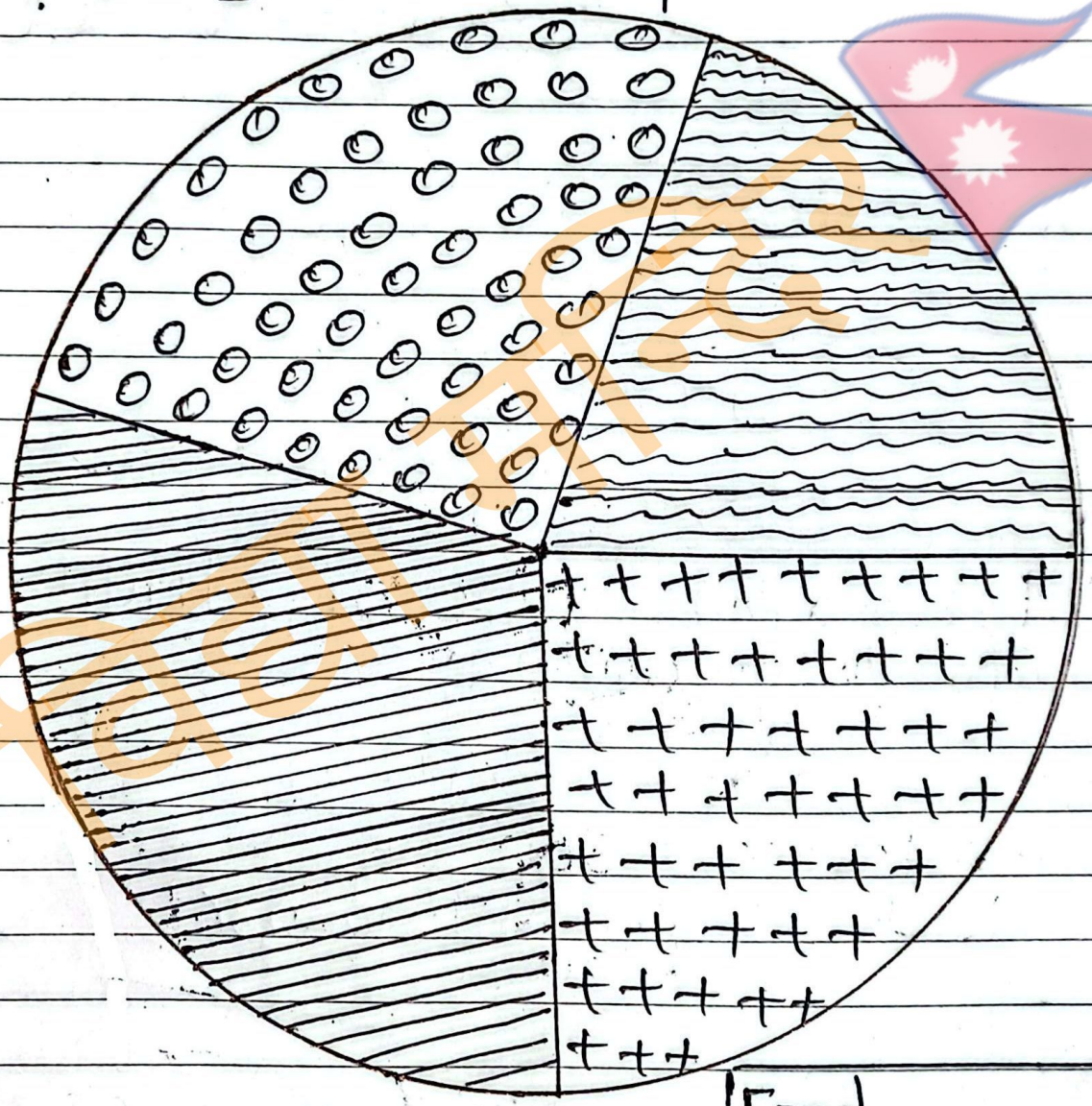
Expenditure on education $= 2500 \times 0.036^{\circ}$

$= 90^{\circ}$

Expenditure on Rent = 3000 × 0.036°
= 108°

Expenditure on others = 2500 × 0.036°
= 90°

Showing it in a pie chart



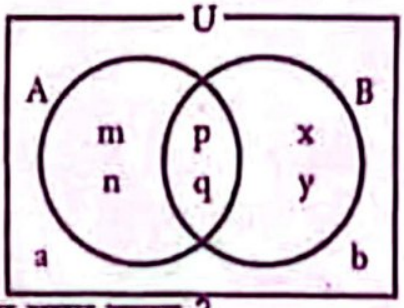
Food	
Education	
Rent	
others	

Thank You !!!

वालिङ नगरपालिका, वालिङ, स्याङ्जा
आधारभूत तह उत्तीर्ण परीक्षा (कक्षा- ८), २०८१
Basic Level Examination-2081

Class : 8
Subject : Mathmetics | *Times : 2hrs* | **F.M : 50**

1. एउटा भेनचित्र दिइएको छ। (Given a venn diagram)



a) अनुपयुक्त उपसमूहलाई परिभाषित गर्नुहोस्।
Define improper subset [1]

b) समूह A को अनुपयुक्त उपसमूह लेख्नुहोस्।
Write the improper subset of set A [1]

c) यदि समूह B का सदस्यहरु x,y मात्र भएको भए A र B कस्ता समूह हुन्छन् ?
If x,y are only the members of set B then what type of set are A and B ? [1]

2. जनकले एउटा घडिको अंकित मूल्य रु. 400 कायम गऱ्यो। उसले 10% छुटमा बेच्दा रु. 40 नाफा गऱ्यो भने,
Janak marked the price of a watch as Rs. 400. He sold it allowing a discount of 10% then the profit Rs. 40 is made.

a)10% छुट भन्नाले के बुझिन्छ ? What do you understand by 10% discount ? [1]

b) छुट रकम पत्ता लगाउनुहोस्। Find the discount Amount ? [1]

c) सो घडी कतिमा किनेको रहेछ ? Find the cost price of the watch ? [2]

3. राधिकाले रु. 100 को एक वर्षका 10 रुपियाँ ब्याजका दरले आँफूसँग भएको रु. 4,00,000 वाणिज्य बैङ्कमा २ वर्षका लागि जम्मा गरिन्।
Radhika has deposited Rs. 4,00,000 in a commercial bank for 2 years at the rate of Rs. 10 interest per annum for Rs. 100.

a) राधिकाले वार्षिक कति प्रतिशत ब्याजदरमा रकम जम्मा गरेकी रहिछन् ?
(At what percent of interest rate per annum had Radhika deposite the amount of money ? [1]

b) सोहि ब्याजदरमा राधिकाले 2 वर्षमा कति ब्याज प्राप्त गर्छिन् ?
How much interest will Radhika get in 2 years at the same rate of interest ? [2]

c) राधिकाकी जेठी छोरी 10 वर्ष र कान्छी छोरी 6 वर्षका छन् । यदि राधिकाले आफूसँग प्राप्त भएको ब्याज रकमलाई छोराहरुको उमेरको अनुपातका आधारमा बाँडिन् भने जेठी छोरीले कति रकम कान्छि छोरीले भन्दा बढि प्राप्त गर्छिन् ?

The age of elder and younger daughter of Radhika's are 10 years and 6 years respctively. If Radhika divides the obtained interest to her daughters based on the the ratio of their ages, how much more money will the elder daughter get than the younger daughter. [2]

4. 30 दिनको महिनामा जम्मा 25,92,000 सेकेन्ड हुन्छन् ।

(In a month of 30 days, there are 25,92,000 seconds.)

a) यसलाई वैज्ञानिक सङ्केतमा लेख्दा दिइएको मध्ये कुनले जनाइन्छ ? Which of the following is correctg for its scientific notation ? [1]

i) $25.92X14^4sec$ ii) $2.592X10^6sec$

iii) $2.59X10^7sec$ iv) $259.2X10^3sec$.

b) 2592 लाई पञ्चआधार सङ्ख्या पद्धतिअनुसार लेख्नुहोस् ।

(Write 2592 in Quinary number system) [1]

c) यदि ■ चिन्हले 1 र □ चिन्हले 0 लाई जनाउँछ भने, 25 लाई द्वि-आधार सङ्ख्या पद्धतिमा जनाउन तल दिइएका कुन-कुन ब्लकलाई छायाँ पार्नुपर्दछ ? छायाँ पारेर देखाउनुहोस्।

If ■ and □ denonte 1 and 0 respectively, which of the following blocks should be shaded to denote 25 in binary number system ? [1]

d) $0.\overline{34}$ लाई भिन्नमा रुपान्तरण गर्नुहोस् ।

Convert $0.\overline{34}$ into fraction. [2]

5. कुनै वृत्ताकार चउरको परिधि 132 मि. भए

(The Circumference of a circular ground is 132m)

a) वृत्तको परिधि निकाल्ने सूत्र लेख्नुहोस् ।

Write the formula to find the circumference of circle. [1]

b) त्यसको चौरको अर्धव्यास निकाल्नुहोस् ।

Calculate the radius of the ground [1]

c) त्यसको क्षेत्रफल पत्ता लगाउनुहोस् ।

Find its Area [2]

d) त्यस चउरका बिचमा एउटा 40mX30m को आयतकार पोखरी छ भने सो पोखरीको क्षेत्रफल निकाल्नुहोस् ।

At the centre of ground, there is a rectangular pond of dimension 40mX30m then find the area of the pond. [1]

6. a) $(2x+1)^2$ को विस्तारित रुप लेख्नुहोस् ।

Write the expanded form of $(2x+1)^2$ [1]

b) सरल गर्नुहोस् (Simplify): $\frac{x^2-y^2}{x+y} \div \frac{x-y}{x+y}$ [2]

7. यदि दुई सङ्ख्याहरुको योगफल 8 र अन्तर 6 छ भने,

If the sum of two numbers is 8 and the difference between them is 6, then

a) माथिको कथनलाई x र y को रुपमा समीकरण व्यक्त गर्नुहोस् ।

Express the above information in the form of equation by using x and y. [1]

b) लेखाचित्रको प्रयोग गरी x र y को मान पत्ता लगाउनुहोस् ।

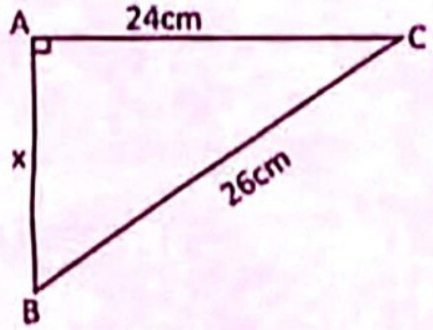
Find the value of x and y by using graphical method [2]

8. a) दिइएको अभिव्यञ्जकहरुको म.स पत्ता लगाउनुहोस् । Find the H.C.F of given agebraic expressions :

$5x-20$, x^2-16 [2]

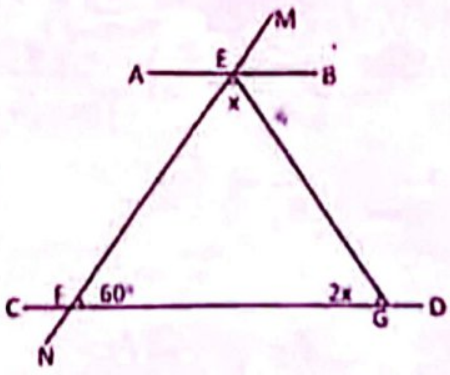
b) दिइएको त्रिभुजमा x को मान पत्ता लगाउनुहोस् ।

In the given triangle, find the value of x. [2]



9. दिइएको चित्रमा सिधा रेखाहरु AB र CD लाई MN ले क्रमशः विन्दु E र F मा प्रतिच्छेदन गरेको छ । चित्रको अवलोकन गरी तलका प्रश्नहरुको उत्तर दिनुहोस् ।

In the adjoining figure, Mn intersects straight lines AB and CD at point E and F respectively. Observe the figure and answer the following questions.



a) चित्रमा एक जोडा एकान्तर कोणको नाम लेख्नुहोस् । [1]

Write a pair of alternate angles in the figure [3]

b) कोणहरुको नापको आधारमा त्रिभुज EFG कस्तो त्रिभुज रहेछ ?
What type of triangle is EFG according to angles of the triangle ?

c) ∠BEG को मान कति भएको अवस्थामा AB र CD समानान्तर होलान् ?
At what value of ∠BEG, the line segments AB & CD will parallel ? [1]

10. a) PQ=8cm, PS=5.5cm र ∠SPQ=60° भएको एउटा समानान्तर चतुर्भुज PQRS को रचना गर्नुहोस् ।
Construct a parallelogram PQRS with PQ=8cm, PS=5.5cm and ∠SPQ=60° [3]

b) समानान्तर चतुर्भुज PQRS बाट दुईवटा त्रिभुज PQS र QRS बनाउनुहोस् । अब △PQS र △QRS अनुरुप हुन्छन् भनी प्रमाणित गर्नुहोस् ।
Construct two triangles PQS and QRS from the parallelogram PQRS. Prove that △PQS and △QRS are congruent. [2]

11. a) नियमित टेसेलेसन कुन प्रकारको त्रिभुजबाट बनाउन सकिन्छ ?
Which typ of triangle is used to make regular tessellation ? [1]

b) P(4,3), Q(7,3) र R(4,-3) एउटा समकोणी त्रिभुजका शिर्षविन्दुहरु हुन् Y-अक्षमा परावर्तन गरेपछि त्रिभुज PQR र यसको प्रतिविम्बलाई लेखाचित्रमा प्रस्तुत गर्नुहोस् ।
P(4,3), Q(7,3) and R(4,-3) are the vertices of a right-angled triangle. Draw the trangles and its image in the graph paper after reflecting in Y-axis. [3]

c) विन्दुहरु A(4,1) र B(4,5) जोड्ने रेखाको Y-अक्षदेखि लम्ववत् दुरी पत्ता लगाउनुहोस् ।
Find the perpendicular distance of the line joining the points A (4,1) and B(4, 5) from Y-axis. [1]

12. अनुपको परिवारको मासिक खर्च तलको तालिकामा दिइएको छ ।
The monthly expenditure of Anup's family is shown in th table below.

a) अनुपको परिवारको मासिक औषत खर्च कति रहेछ ?

शीर्षक (Item)	खाना (Food)	शिक्षा (Education)	घरभाडा (Rent)	अन्य (other)
खर्च रु. (Expenditure (Rs.))	2,000	2,500	3,000	2,500

What is the monthly average expenditure of Anup's Family ? [1]

b) वृत्तचित्र खिची अनुपको परिवारको खर्च देखाउनुहोस् ।
Show the expenditure of Anup's Family in a pie-chart. [2]

::समाप्त::