Mother's International Academy

Affiliated to CBSE Delhi (10+2)

A Place To Grow

Holiday – Homework (Session – 2026 – 2027)

Std.: X

English

1. Writing Task (Descriptive Paragraph)

Write a **paragraph (120–150 words)** on:

"Why a Sustainable Future is the Need of the Hour"

Include:

- Meaning of sustainability
- Current environmental challenges
- Importance of thinking and acting responsibly

2. Article Writing

Write an **article (150–200 words)** for a school magazine on:

"Think, Act, Transform: Steps towards a Sustainable Future"

Include:

- Problems like pollution, deforestation, climate change
- Role of individuals and youth
- Practical solutions for sustainability

3. Slogan Writing

Write **5 powerful slogans** on sustainability, for example:

- "Think Green, Act Clean, Build a Sustainable Scene"
- "Save Earth Today for a Better Tomorrow"

4. Poster Making

Design a **poster on A4 sheet** on:

"Sustainable Future Starts with You"

Include:

- Slogans
- Symbols (earth, trees, water, solar energy)
- Awareness message

5. Grammar Integration

Do the following:

1. We must save natural resources. *(Use modal: "should")*
2. People are destroying forests rapidly. *(Change into passive voice)*
3. Sustainability is important. *(Make it a complex sentence)*

6. Reading & Critical Thinking (Case-Based)

Read the situation:

"A city is facing severe environmental degradation due to industrial growth and overpopulation."

Answer:

1. What are the main causes of environmental damage?
2. Suggest three solutions for sustainable development.
3. How can students contribute to change?

7. Interdisciplinary Project

Prepare a **project file (2–3 pages)** on:

- Renewable energy sources (solar, wind, hydro)
- Role of forests in sustainability
- Impact of human activities on climate

Include:

- Headings
- Diagrams or pictures

8. Reflection Writing in 100 words

Write:

"My Commitment Towards a Sustainable Future"

Include:

- Your daily eco-friendly habits
- Changes you plan to adopt
- Message to society

Present it in **a 1–2 page project file with headings and diagrams.**

Hindi

- पर्यावरण संरक्षण से संबंधित चित्र ए-4 साइज पेपर पर चिपकाकर उसके बारे में पंक्तियाँ लिखें।
- स्पर्श भाग - 2 से बड़े भाई साहब, डायरी का एक पन्ना तथा साखी की प्रश्नोत्तर याद कीजिए।
- हिन्दी व्याकरण पाठ्यपुस्तक से पदबंध तथा समास के अभ्यास कार्य पूर्ण करें एवं याद करें।

Chemistry

1. Draw and label the setup used for electrolysis of water.
2. List any five daily life examples of chemical reactions.

HOTS (Higher Order Thinking Skills)

3. Why are decomposition reactions called the opposite of combination reactions?
4. A student observed bubbles and temperature rise during an experiment. What can you conclude about the reaction?
5. Why do we apply paint on iron gates?
6. Why should food be stored properly to avoid rancidity?
7. Explain why digestion of food is considered a chemical change.

Use your Chemistry notebook to answer this question.

Project Work

8. Prepare a chart/model on any one topic:

i. Corrosion and its prevention
ii. Types of chemical reactions
iii. Importance of exothermic reactions in daily life
iv. Chemical reactions in kitchen activities
v. You can decorate it with diagrams, coloured equations, and real-life examples.

Biology

Use your Biology notebook to answer this question.

1. Why do desert plants open their stomata at night instead of daytime? Explain how this adaptation helps them during photosynthesis.
2. Why is diffusion alone not sufficient for transportation in large multicellular organisms?
3. During vigorous exercise, muscle cells sometimes perform anaerobic respiration. Why does this happen even though oxygen is present in the environment?
4. If chlorophyll is absent in leaves, can photosynthesis still occur? Explain your answer with reasons.
5. Compare aerobic and anaerobic respiration with examples.
6. Explain how transportation occurs in plants through xylem and phloem. Why is transportation necessary in tall plants?
7. Describe the human respiratory system and explain the mechanism of breathing.

Social Science

- Find out at least 25 mcqs , 10 short answer type and 5 long answer type questions from the first 2 chapters of Geography, History , Pol.Sc and Economics with Answers...And learn Them.

Information Technology

- Write the answers in fair copy

- Task 1). Write all the textbook questions till stress management chapter (Communication Skill + Stress management)

- Task 2). Draw a **diagram/chart** of the **Communication Process** Include:
- Sender
- Message
- Encoding
- Channel
- Receiver
- Decoding
  Feedback
- 📌 *Make it colorful and use real-life examples*

- Task 3). Write a short case study (250–300 words):
- Situation: Exam stress / peer pressure / family issue
  Identify:
- Type of stress (Acute / Chronic)
- Symptoms (physical/emotional)
- Solution (how to manage it)

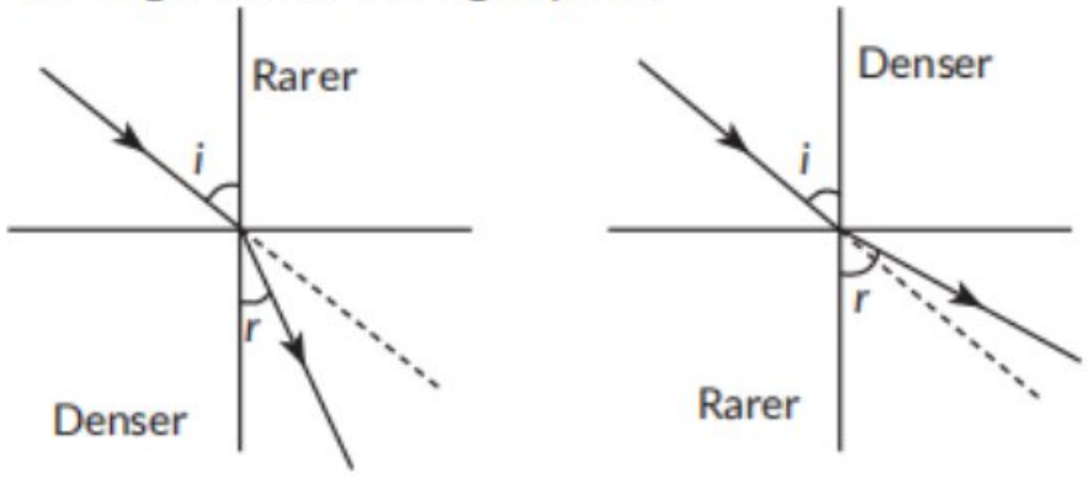
SCIENCE (086 - PYQ's)

CASE STUDY QUESTIONS [Marks:0X0 = 0]

Question No: 1

Read the passage given below and answer the following questions:

When the rays of light travels from one transparent medium to another, the path of light is deviated. This phenomena is called refraction of light. The bending of light depends on the optical density of medium through which the light pass.



The speed of light varies from medium to medium. A medium in which the speed of light is more is optically rarer medium whereas in which the speed of light is less is optically denser medium. Whenever light goes from one medium to another, the frequency of light does not change however, speed and wavelength change. It concluded that change in speed of light is the basic cause of refraction.

(i) When light travels from air to glass, the ray of light bends

(a) towards the normal

(b) away from normal

(c) anywhere

(d) none of these

(ii) A ray of light passes from a medium A to another medium B. No bending of light occurs if the ray of light hits the boundary of medium B at an angle of

(a) 0° (b) 45° (c) 90° (d) 120°

(iii) When light passes from one medium to another, the frequency of light

(a) increases (b) decreases

(c) remains same (d) none of these

(iv) When light passes from glass to water, the speed of light

(a) increases (b) decreases

(c) remains same (d) first increases then decrease

(v) The bottom of pool filled with water appears to be due to refraction of light.

(a) shallower (b) deeper

(c) at same depth (d) empty

Question No: 2

Read the passage given below and answer the following questions:

The curved surface of a spoon can be considered as a spherical mirror. A highly smooth polished surface is called mirror. The mirror whose reflecting surface is curved inwards or outwards is called a spherical mirror. Inner part works as a concave mirror and the outer bulging part acts as a convex mirror. The center of the reflecting surface of a spherical mirror is called pole and the radius of the sphere of which the mirror is formed is called radius of curvature.

(i) When a concave mirror is held towards the sun and its sharp image is formed on a piece of carbon paper for some time, a hole is burnt in the carbon paper. What is the name given to the distance between the mirror and carbon paper?

(ii) On what factors does the focal length of a spherical mirror depend?

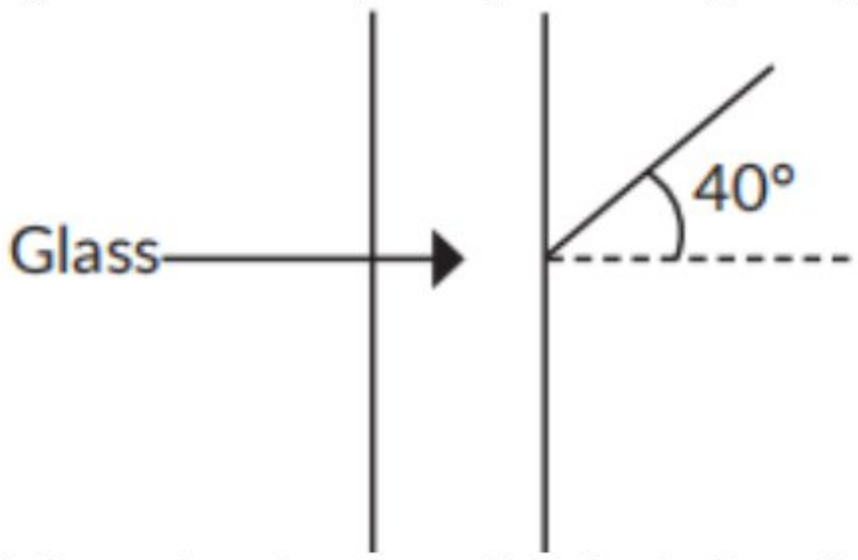
(iii) Name the type of mirror used in the designing of solar furnaces. Explain how can high temperature is achieved by this device.
OR
List two possible ways in which a concave mirror can produce a magnified image of an object placed in front of it. State the difference if any between these two images.

VERY SHORT ANSWER [Marks:0X0 = 0]

Question No: 3
Define aperture of a mirror.
Question No: 4
According to the sign convention, which mirror has negative focal length?

SHORT ANSWER TYPE-I [Marks:0X0 = 0]

Question No: 5
Figure shows a ray of light meeting the glass of the window of a car at an angle of incidence of 40°.



(i) Assuming that the refractive index of glass is 1.5 , find the angle of refraction for this ray in the glass.
(ii) Complete the diagram by sketching the path of the ray through the glass and out on the other side.
(iii) Use the diagram to explain the effect of the glass on what is seen by the driver.
Question No: 6
List four specific characteristics of the images of the objects formed by convex mirrors.

LONG ANSWER TYPE [Marks:0X0 = 0]

Question No: 7
What is meant by power of a lens? Name and define its S.I. unit.
One student uses a lens of focal length +50 cm and another of -50 cm . State the nature and find the power of each lens. Which of the two lenses will always give a virtual and diminished image irrespective of the position of the object?
Question No: 8
(a) Draw a ray diagram to show the formation of image by a concave lens when an object is placed in front of it.
(b) In the above diagram mark the object distance (u) and the image distance (v) with their proper sign (+ve or -ve as per the new Cartesian sign convention) and state how these distances are related to the focal length (f) of the concave lens in this case.
(c) Find the nature and power of a lens which forms a real and inverted image of magnification -1 at a distance of 40 cm from its optical centre.

MOTHER'S INTERNATIONAL ACADEMY

MATHEMATICS (041 - REF.BOOKS)

OBJECTIVE TYPE [Marks:0X0 = 0]

Question No: 1
The sum of exponents of prime factors in the prime-factorisation of 196 is:
(a) 3 b) 4 (c) 5 (d) 2
Question No: 2
H.C.F. of 2 numbers is 113 , and their L.C.M. is 56952 . If one number is 904 , then the other number is:
(a) 7911 (b) 7119 (c) 7791 (d) 7971
Question No: 3
The H.C.F. of 306 and 1314 is:
(a) 15 (b) 16 (c) 17 (d) 18
Question No: 4
The H.C.F. of $3^3 \times 5$ and $3^2 \times 5^2$ is:
(a) 135 (b) 15 (c) 225 (d) 45
Question No: 5
p is:
(a) an integer (b) an irrational number (c) a rational number (d) none of the above

ASSERT & REASONING [Marks:0X0 = 0]

Question No: 6
Mark the option which is most suitable:
Assertion: $-1, 0, 2, \frac{-4}{3}$ all are example of rational numbers.
Reason: All integers and fractions are rational numbers.
(a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
(b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
(c) Assertion is true but the Reason is false.
(d) Assertion is false but the Reason is true.

COMPREHENSION TYPE [Marks:0X0 = 0]

Question No: 7
Suresh planned a rennovation of his house. He want to renovate ceiling of his room by putting square shape tiles on it. Ceiling of the room is $8\ \mathrm{m}25\ \mathrm{cm}$ long and $6\ \mathrm{m}75\ \mathrm{cm}$ broad.
(i) Find the dimensions of each tiles.
(ii) Find the number of tiles required for the project.

CASE STUDY QUESTIONS [Marks:0X0 = 0]

Question No: 8
Vedika wants to organize her birthday party. She was happy on her birthday. She is very health conscious. So decided to serve fruits only to the guests. She has 36 apples, 60 bananas at home and decided to serve them. She want to distribute the fruits among guests. She does not want to discriminate among guests so she decided to distribute the fruits equally among all. (i) How many maximum guests Vedika can invite?
(a) 12 (b) 120 (c) 6 (d) 180
(ii) How many apples and bananas will each guests get?

(a) 3 apples 5 bananas (b) 5 apples 3 bananas (c) 2 apples 4 bananas (d) 4 apples 2 bananas
(iii) Vedika decide to add 42 mangoes. In this case how many maximum guests Vedika invite?
(a) 12 (b) 120 (c) 6 (d) 180
(iv) If Vedika decide to add 3 more mangoes and instead 6 apples, in this case how many maximum guests Vedika can invite?
(a) 12 (b) 30 (c) 15 (d) 24
(v) How many total fruits will each guest get from case (iii)?
(a) 36 (b) 17 (c) 22 (d)23

VERY SHORT ANSWER [Marks:0X0 = 0]

Question No: 9
Find a rational number between $\sqrt{2}$ and $\sqrt{3}$.
Question No: 10
Two positive integers a and b can be written as $a = x^3y^2$ and $b = xy^3$. x, y are prime numbers. Find L.C.M. (a, b).
Question No: 11
If H.C.F. $(336, 54) = 6$, find L.C.M. $(336, 54)$.

SHORT ANSWER TYPE [3M] [Marks:0X0 = 0]

Question No: 12
Three sets of English, Hindi and Sociology books dealing with cleanliness have to stacked in such a way that all the books are stored topic-wise and height of each stack is the same. The number of English books is 96, number of Hindi books is 240 and the number of Sociology books is 336. Assuming that the books are of same thickness, determine the number of stacks of English, Hindi and Sociology books.
Question No: 13
Find the (i) H.C.F. of $8\left(x^2-4\right), 12\left(x^3+8\right)$ and $36\left(x^2-3x-10\right)$ and (ii) L.C.M. of $\left(a^2+2a\right)^2, 2a^3-2a+3a^2$ and $2a^4-3a^3-14a^2$
Question No: 14
Three iron rods of length $24\ \mathrm{m}, 94\ \mathrm{m}, 36\ \mathrm{m}$ have to be cut into poles of the same length. What is the greatest length possible?

LONG ANSWER TYPE [Marks:0X0 = 0]

Question No: 15
Prove that $\frac{2+\sqrt{3}}{5}$ is an irrational number, given that $\sqrt{3}$ is an irrational number.

MOTHER'S INTERNATIONAL ACADEMY

HHW

MATHEMATICS (041 - REF.BOOKS)

OBJECTIVE TYPE [Marks:0X0 = 0]

Question No: 1

If 1 is a root of the equations $ay^2 + ay + 3 = 0$ and $y^2 + y + b = 0$, then ab equals:

(a) 3 (b) $-\frac{7}{2}$ (c) 6 (d) -3

Question No: 2

Which of the following is a polynomial?

(a) $x^2 - 6\sqrt{x} + 2$ (b) $\frac{5}{x^2} - 3x + 1$ (c) $\sqrt{\sqrt{x} + \frac{1}{\sqrt{x}}}$ (d) None of these

Question No: 3

The sum and product of the zeroes of the quadratic polynomial $4x^2 - 27x + 3k^2$ are equal. Then, the value of k is

(a) $+3$ (b) ± 3 (c) -3 (d) 0

Question No: 4

If one of the zeroes of the quadratic polynomial $(k - 1)x^2 + kx + 1$ is -3, then the value of k is:

(a) $\frac{4}{3}$ (b) $\frac{-4}{3}$ (c) $\frac{2}{3}$ (d) $\frac{-2}{3}$

Question No: 5

Write the zero of the polynomial $f(x) = x^2 - x - 6$.

(a) $-3, 2$ (b) $-3, -2$ (c) 3,2 (d) $3, -2$

ASSERT & REASONING [Marks:0X0 = 0]

Question No: 6

Mark the option which is most suitable:

Assertion: $x^2 + 7x + 12$ has no real zeroes.

Reason: A quadratic polynomial can have at the most two zeroes.

(a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.

(b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.

(c) Assertion is true but the Reason is false.

(d) Assertion is false but the Reason is true

COMPREHENSION TYPE [Marks:0X0 = 0]

Question No: 7

Read the following passage and answer the questions that follows:

A teacher told 10 students to write a polynomial on the black board.

Students wrote

1. $x^2 + 2$ 6. $x - 3$
2. $2x + 3$ 7. $x^4 + x^2 + 1$
3. $x^3 + x^2 + 1$ 8. $x^2 + 2x + 1$
4. $x^3 + 2x^2 + 1$ 9. $2x^3 - x^2$
5. $x^2 - 2x - 1$ 10. $x^4 - 1$

Based on the information, answer the following questions:

(i) How many students wrote cubic polynomial?

(ii) Divide the polynomial $\left(x^2 + 2x + 1\right)$ by $(x + 1)$.

CASE STUDY QUESTIONS [Marks:0X0 = 0]

Question No: 8

Junk food is an unhealthy food option, that is high in calories and little dietary fiber, protein, vitamins, minerals, or other important forms of nutritional value. A survay was conducted on few students consumes. If a be the number of students who consumes junk food, b be the number of students who consumes healthy food such that $a > b$ and a and b are the zeroes of the quadratic polynomial $f(x) = x^2 - 7x + 10$, then answer the following questions:

(i) The type of expression of the polynomial in the above statement is:
(a) quadratic (b) cubic (c) linear (d) bi-quadratic
(ii) The number of students who consumes junk food are:
(a) 5 (b) 2 (c) 7 (d) none of these
(iii) The number of students who consumes healthy food are:
(a) 5 (b) 2 (c) 7 (d) none of these
(iv) The quadratic polynomial whose zeroes are -3 and -4 is:
(a) $x^2 + 4x + 2$ (b) $x^2 - x - 12$ (c) $x^2 + 7x + 12$ (d) none of these
(v) If one zero of the polynomial $x^2 - 5x + 6$ is 2 then the other zero is:
(a) 6 (b) -6 (c) 3 (d) none of these

VERY SHORT ANSWER [Marks:0X0 = 0]

Question No: 9

For what value of k is -2 a zero of the polynomial $f(x) = 3x^2 + 4x + 2k$?

Question No: 10

Find the remainder when
$f(x) = (2x3 - 3 \times 2 + 7x - 8)$
is divided by $g(x) = (x - 1)$.

Question No: 11

If $x = \frac{2}{3}$ and $x = -3$ are zeroes of the polynomial $ax2 + 7x + b$
$= 0$, find the value of a and b.

SHORT ANSWER TYPE [3M] [Marks:0X0 = 0]

Question No: 12

Find a cubic polynomial when the sum, sum of the products of its zeroes taken two at a time and product of its zero are 2,7, - 14 respectively.

Question No: 13

Solve for x :
$3x^2 - 2\sqrt{6}x + 2 = 0$.

Question No: 14

Solve the quadratic polynomial $2x^2 + ax - a^2$ for x.

LONG ANSWER TYPE [Marks:0X0 = 0]

Question No: 15

Find the zeroes of the quadratic polynomial $7y^2 - \frac{11}{3}y - \frac{2}{3}$ and verify the relationship between the zeroes and the coefficients.

MATHEMATICS (041 - REF.BOOKS)

OBJECTIVE TYPE [Marks:0X0 = 0]

Question No: 1
The pair of linear equations $2x + 3y = 4$ and $3x + 4y = 9$ has:
(a) infinitely many solutions (b) no solution (c) one unique solution (d) two solutions

Question No: 2
The value of k for which the system of equations $x + y - 4 = 0$ and $2x + ky = 3$, has no solution, is:
(a) -2 (b) $\neq 2$ (c) 3 (d) 2

Question No: 3
The value of k for which the system of linear equations $x + 2y = 3, 5x + ky + 7 = 0$ is inconsistent is:
(a) $-\frac{14}{3}$ (b) $\frac{2}{5}$ (c) 5 (d) 10

Question No: 4
A system of simultaneous linear equations is said to be inconsistent, if it has:
(a) one solution (b) two solutions (c) no solution (d) infinite solutions

Question No: 5
If the pair of linear equations $2x + 3y = 11$ and $(m + n)x + (2m - n)y - 33 = 0$ has infinitely many solutions, then the values of m and n, are ..... and ..... respectively.
(a) 5,1 (b) 1, 2 (c) $-1, 5$ (d) $1, -5$

ASSERT & REASONING [Marks:0X0 = 0]

Question No: 6
Mark the option which is most suitable:
Assertion: $x + y - 4 = 0$ and $2x + ky - 3 = 0$ has no solution if $k = 2$.
Reason: $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ are consistent if $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$
(a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
(b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
(c) Assertion is true but the Reason is false.
(d) Assertion is false but the Reason is true.

CASE STUDY QUESTIONS [Marks:0X0 = 0]

Question No: 7
It is common that Governments revise travel fares from time to time based on various factors such as inflation (a general increase in prices and fall in the purchasing value of money) on different types of vehicles like auto, Rickshaws, taxis, Radio cab etc. The auto charges in a city comprise of a fixed charge together with the charge for the distance covered. Study the following situations

Name of the city	Distance travelled (Km)	Amount paid (Rs.)
City A	10	75
	15	110
City B	8	91
	14	145

Situation 1: In city A, for a journey of 10 km, the charge paid is Rs 75 and for a journey of 15 km, the charge paid is Rs 110 .

Situation 2: In a city B, for a journey of 8 km, the charge paid is Rs 91 and for a journey of 14 km, the charge paid is Rs 145.

Refer situation 1

1. If the fixed charges of auto rickshaw be Rs x and the running charges be Rs y km/hr, the pair of linear equations representing the situation is

a) $x + 10y = 110, x + 15y = 75$ b) $x + 10y = 75, \quad x + 15y = 110$

c) $10x + y = 110, \quad 15x + y = 75$ d) $10x + y = 75, \quad 15x + y = 110$

2. A person travels a distance of 50 km. The amount he has to pay is

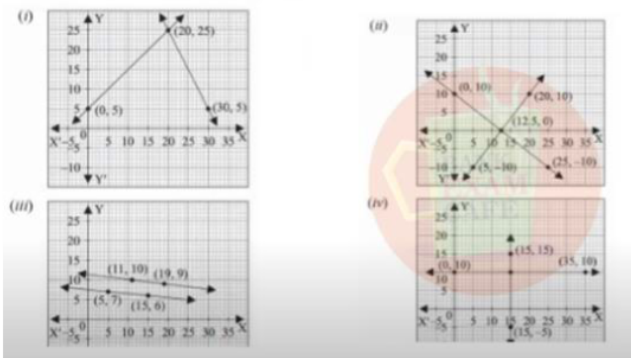
a) Rs. 155 b) Rs. 255 c) $\text{Rs}\,.355$ d) Rs. 455

Refer situation 2

3. What will a person have to pay for travelling a distance of 30 km ?

a) Rs. 185 b) Rs.289 C) Rs. 275 d) Rs.305

4. The graph of lines representing the conditions are: (situation 2)



VERY SHORT ANSWER [Marks:0X0 = 0]

Question No: 8

Find the values of x and y in $3x + 2y = 4$ and $2x - 3y = 7$.

Question No: 9

Solve for x and y :

$\sqrt{2}x - \sqrt{3}y = 0$ and $\sqrt{3}x - \sqrt{8}y = 0$.

Question No: 10

Cost of 2 pens and 3 pencils together is ' 40 and cost of 6 pens and 9 pencils together is ' 130 . Express above statement in the form of linear equations.

Question No: 11

Given the linear equation $x - 2y - 6 = 0$, write another linear equation in these two variables, such that the geometrical representation of the pair so formed is: intersecting lines

SHORT ANSWER TYPE [3M] [Marks:0X0 = 0]

Question No: 12

Find c if the system of equations $cx + 3y + (3 - c) = 0, 12x + cy - c = 0$ has infinitely many solutions?

Question No: 13

Determine the value of a and b for which the given system of equations has infinitely many solutions: $(2a - 1)x + 3y - 5 = 0$ and $3x + (b - 1)y - 2 = 0$.

Question No: 14

Solve the following linear equations algebraically : $(a - b)x + (a + b)y = a2 - 2ab - b2$ and $(a + b)(x + y) = a2 + b2$.

LONG ANSWER TYPE [Marks:0X0 = 0]

Question No: 15

Draw graph of the following pair of linear equations:

$y = 2(x - 1)$

$4x + y = 4$

Also write the coordinate of the points where these lines meets X-axis and Y-axis.

Std.: X

Urdu

عنوان:۔ ''پائیدار مستقبل کی تشکیل میں تبدیلی اور عملی جامہ''

سرگرمی:۔ عنوان کے مطابق تصویر کشی کرتے ہوئے یا تصویر چسپا کر کے درج ذیل اہم نکات پر روشنی ڈالیں۔

مثلاً :۔ کچرے کا انتظام، ایکو کلب، ذہنی سوچ میں تبدیلی وغیرہ۔

نوٹ:۔ مزید نکات اور بھی شامل کیا جا سکتا ہے۔