CLASS 9 - BIOLOGY

Q1 a) Differentiate between diffusion and osmosis.

b) On the basis of your understanding of movement of molecules write **OSMOSIS** or **DIFFUSION** in the examples below?

i. The student sitting next to you just came from gym class and forgot to shower and you can tell. _____

ii. Oxygen molecules move from the air sacs in the lungs across the cell membranes into the blood _____

iii. Robert sprays water on the veggies in the produce section to "plump them up".____

Observe your surroundings and list 3 examples of osmosis and diffusion each.

Q2 Write two similarities and two dissimilarities between mitochondria and chloroplast.

Q3. You have just bought a tropical fish for your freshwater aquarium. Unfortunately, you do not realize it is a saltwater fish. Using your knowledge of osmosis, **explain** why this fish will not survive in your aquarium.

Q4 Fill in this table. Write whether water move INSIDE the cell or OUTSIDE the cell.

Intracellular fluid concentration (inside the cell)	**Extracellular fluid concentration (** outside the cell)	Comments
5% salt	10% salt	
9% salt	9% salt	
59% water	45% water	

Q5 Structure of Mitochondria is modified to perform its function. Explain.

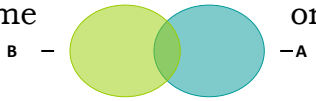
Q6 Observe the following pictorial representation and answer the questions below.

(Circle A represents Plant cell and Circle B represents animal cell.)

i) Name any three organelles which will fall in overlapping region.

ii) Name one organelle which is specific to circle A.

iii) Name one organelle which is specific to circle B.

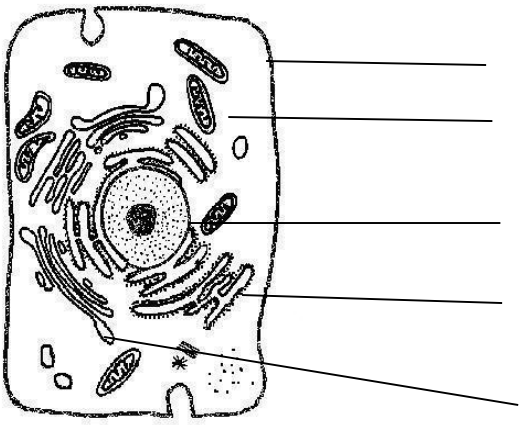


Q7. **Design a concept map to explain the types of plant tissue.**

Tissue, location Function, Structure, Permanent tissue, Meristematic tissue.

Q.8 Draw a well labelled diagram of prokaryotic cell.

Q9 Comment on the type of cell and label the diagram.



Note – Biology assignment to be done in homework notebook.

Chemistry

(Matter in our Surroundings)

Q1. Camphor disappears without leaving any residue. Explain?

Q2. Both the process of evaporation and boiling involves the change of state from liquid to gas but still they are different from each other. Justify.

Q3. Why do we feel cool when we touch a piece of ice?

Q4. What is the significance of boiling point & melting point of a substance?

Q5. When an incense stick (agarbatti) is lighted in one corner of a room, its fragrance spreads in the whole room quickly. Which characteristic of the particles of matter is illustrated by this observation?

Q6. The boiling point of alcohol is 78 deg C. What is this temperature on Kelvin scale?

Q7. The Kelvin scale temperature is 0 K. What is the corresponding Celsius scale temperature?

Q8. What is Latent Heat of Fusion?

Q9. Define latent heat of Vaporization?

Q10. Why cold is not a matter but cold drink is a matter?

H.H.W. ACTIVITY (How can you show that evaporation causes cooling?)

As we know that rate of evaporation depend on temperature, surface area, wind speed and humidity. This summer observe the effect of outside temperature on evaporation.

STEPS TO BE FOLLOWED

1. Take a medium size earthen pot (Matka).

2. Fill it with water.

3. Keep it outside in open to for some hours.

4. At 5 different times in a day note down temperature outside and temperature of water in the pot. (Using clinical thermometer)

5. Note down temperature readings in tabular form.

S.NO.	TIME	TEMPERATURE (OUTSIDE)	TEMPERATURE OF WATER (IN THE POT)

6. Conclude your observation.

Rate of evaporation _____ with _____ in temperature and vice versa.

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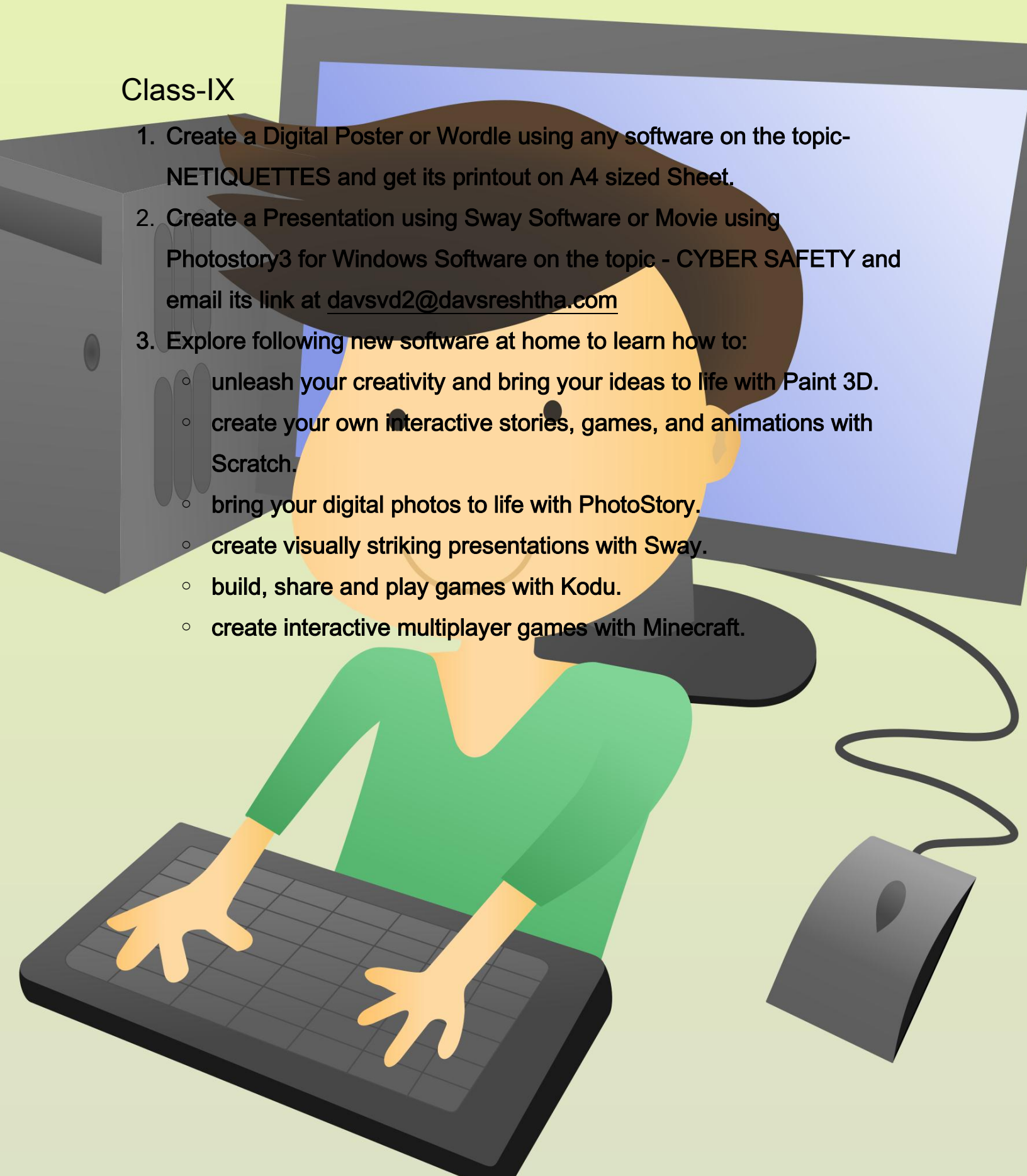
COMPUTER HOLIDAYS HOMEWORK 2018-19



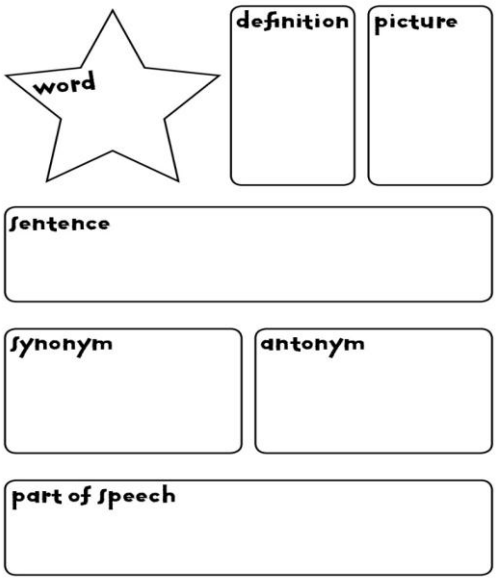
Class-IX

1. Create a Digital Poster or Wordle using any software on the topic- NETIQUETTES and get its printout on A4 sized Sheet.
2. Create a Presentation using Sway Software or Movie using Photostory3 for Windows Software on the topic - CYBER SAFETY and email its link at davsvd2@davsreshtha.com
3. Explore following new software at home to learn how to:
   - unleash your creativity and bring your ideas to life with Paint 3D.
   - create your own interactive stories, games, and animations with Scratch.
   - bring your digital photos to life with PhotoStory.
   - create visually striking presentations with Sway.
   - build, share and play games with Kodu.
   - create interactive multiplayer games with Minecraft.

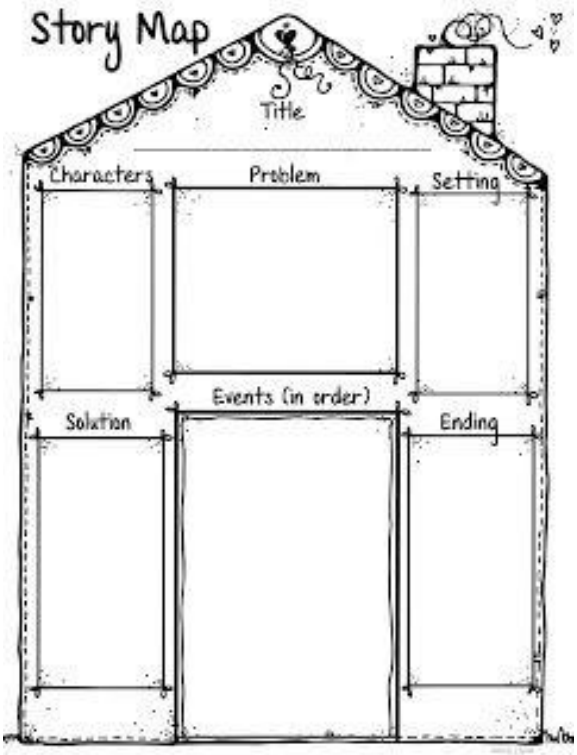
CLASS IX - ENGLISH

NOTE: ALL QUESTIONS MUST BE DONE ON A4 SIZE RULED SHEETS.

1. Prepare a **Mini Dictionary** of 30 difficult words from the text 'BEEHIVE' in the following format.



2. Read the chapter **'The Sound of Music'** and write about the lives of **Evelyn Glennie and Ustad Bismillah Khan** in the following manner.



3. **GET TO KNOW A FAMILY MEMBER BETTER**

Sometimes in our busy schedule we forget to spend some quality time with our near and dear ones. Here's your chance to get closer to one of your family members. (Close or Distant)

Paste the photograph of your family member you want to interview and mention how you are related. Ask them the following questions and write their response(s).

i) Who had the biggest impact on you while growing up?

ii) What are your hobbies?

iii)What are/were your biggest goals?

iv)How do you like to spend your weekend?

v) What was your favourite TV Show while growing up? Why did you like it?

vi) Tell me about a challenge you had to overcome and how you overcame it?

vii) What are some of the items on your bucket list?

4. **SHORT STORY WRITING**

Write a story in about 150-200 words with the following beginning and give a suitable title to it.

It was 6'o clock in the evening and there was a lot of traffic on the road. Mohan was driving his auto when suddenly two teenagers on bike overtook his car.....

5. Last but not the least, have a fun filled vacation, and write about your **Summer Break** in the following format.

HIGHLIGHTS OF MY BREAK

SOMETHING FUN	**SOMETHING NEW**	**SOMETHING SURPRISING**
SOMETHING SPECIAL	**SOMETHING CRAZY**	**SOMETHING ELSE**

Class – IX - French

Design a vocabulary game for French learners (any level)

Points to remember:

- Easy to play and understand
- Rules should be clear i.e. how to play
- Interesting
- Use of flash cards

ग्रीष्मावकाश गृहकार्य

कक्षा – IX

विषय – हिन्दी

1 हरिवंश राय बच्चन की जीवन यात्रा पर आधारित परियोजना कार्य निम्नलिखित आधार बिन्दुओं के अनुसार कीजिए।

- जीवन परिचय
- साहित्यिक योगदान
- साहित्यिक विशेषता
- आपने उनके जीवन से क्या सीखा ?

2 'फिल्म अतिथि देवो भवः' देखकर मेहमान और मेज़बान की मनःस्थिति को समझते हुए अपने विचार लिखिए।

3 'ऊर्जा के स्रोत' विषय को अन्य विषयों के साथ जोड़ते हुए प्रभावशाली विज्ञापन तैयार कीजिए।

- सभी कार्य हल्के हरे रंग की ए–4 साइज़ की शीट पर करें व 4 जुलाई, 2018 को जमा करें।

Class-9 - PHYSICS

Measurements are an integral part of our daily life. Weight, Temperature, Length and every time is a measurement and does play a very important role in our lives. It is the measurement of time that allows us to proceed in an orderly manner in this fast changing world.

We always endeavor to enable the students to acquire knowledge not only through **formal learning/education** but also from their own observations and experiences of their day-to-day lives. Keeping this in mind, the students are to work on the following fun-filled project and record and submit it on an A4 size sheet.

PROJECT: To plot s-t graph from the quantities observed by you while going for a drive and calculate the average velocity.

Suggested time to do this Project: This activity should be done when you are relaxed and feel like going for a drive.

What you need: Help from your elder (any of the parent/driver) to drive a car, a digital watch/stop watch.

STEPS TO FOLLOW

1. Set the odometer of the car at zero when you start from the initial point.
2. After every five minutes note down the odometer reading. Do it at least for an hour
3. Note down the data in the following format

4. Select an appropriate scale and plot the data at s-t graph

S.NO.	TIME	DISTANCE

5. Choose any two instants of time on the graph and find out at which instant the car moved faster

Now basis the above experience, answer the following questions

a) Type of motion experienced by you
b) Average velocity of your trip
c) At which time instant chosen by you in step-5 above, slope of the graph is more
d) Was this activity an enjoyable experience?
   Give one reason in support of your answer.

कक्षा नवमी

विषय संस्कृत

1.धातुरूपाणि लट्लकारे लड्लकारे लृट्लकारे लोटलकारे विधिलिंगलकारे लिखत–

भू भव् पठ् लिख् पा स्था दृष् अस् गम् पच् षक् चं

2.षब्दरुपाणि – बालक लता नदी फल मुनि वारि भानु धेनू पितृ मातृ।

सर्वनामरुपाणि सर्व यत् तद् किम् इदम् तीनों लिंगों में अस्मद् युष्मद्।

3. पंचचित्रवर्णनम् कुरुत।

4. मम विद्यालय मम परिचय च सप्तवाक्यानि लिखत।

CLASS IX - SOCIAL SCIENCE

I. Prepare a PowerPoint presentation on any one topic from Russian Revolution chapter of history.

GENERAL INSTRUCTIONS For making the presentation:

a. Information should be taken from the book.
b. Presentation should be made in MS PowerPoint with less text and more pictures.
c. PPT should be of 6-8 slides.
d. Presentation will be assessed on the basis of originality, timely submission, and content accuracy.
e. PPT should be mailed to the respective history teacher.

II. Prepare a map album of the following maps:
a. Political map of India indicating states and capitals.
b. Physical map of India showing major physical features.
c. Physical map of India showing the different soil types.
d. World map showing the axis and the Allied powers.
e. European map having the major European countries with their capitals.

Note: Map album should be compiled in the work register.

III. Read, learn and revise the chapters of the first term examination.

IV. Prepare chapter wise glossary of the chapters mentioned below:
a. History- Russian Revolution,
b. Political science- constitutional design
c. Economics- people as resource
d. Geography- Physical features of India

Note: 1. glossary should be made in the class work registers of the respective subjects.
2. There should be minimum 10 terms from each chapter.

V. Visit a monument of any city in India and make a creative brochure containing the highlights of the monument.

VI. Geography ISA project.

The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity.

Out of 17 SDGs, **Goal 12 - Responsible Consumption and Production** aims at "doing more and better with less." Using eco-friendly production methods and reducing the amount of waste we generate are targets of Goal 12.

Working towards empowering our students, we at DAV Public School, Sreshtha Vihar have chosen SDG 12 for the Project 'Water Wise', with special reference to Responsible Consumption and Production of Water.

Students of class IX will investigate the reasons for drought in Cape Town and Latur and present their findings in a Newsletter under the following headings:

a) Location (affected areas to be marked on the map)
b) Reasons for drought in both the places.
c) Steps taken by respective governments.
d) Present scenario.
e) Techniques of water conservation (traditional and modern)
f) Responsible consumption and production of water

Guidelines for preparing handmade newsletter

- Two A3 size sheets
- Use pictures, data, graph, map and text etc.

Guidelines for preparing e-newsletter

- Use any software
- Use pictures, data, graph, map and text etc.

Rubrics for assessment

1) Content - 2 marks
2) Creativity in Presentation - 2 marks
3) Layout – 1 mark

HOLIDAYS HOME WORK CLASS- IX [2018-19]

MATHEMATICS

CHAPTER-2 POLYNOMIAL

1. If the polynomials $az^3 + 4z^2 + 3z - 4$ and $z^3 - 4z + a$ leave the same remainder when divided by $z - 3$, find the value of a.
2. The polynomial $p(x) = x^4 - 2x^3 + 3x^2 - ax + 3a - 7$ when divided by $x + 1$ leaves the remainder 19. Find the values of a. Also find the remainder when $p(x)$ is divided by $x + 2$.
3. If both $x - 2$ and $x - \frac{1}{2}$ are factors of $px^2 + 5x + r$, show that $p = r$.
4. Without actual division, prove that $2x^4 - 5x^3 + 2x^2 - x + 2$ is divisible by $x^2 - 3x + 2$. [**Hint:** Factorise $x^2 - 3x + 2$]
5. Simplify $(2x - 5y)^3 - (2x + 5y)^3$.
6. Multiply $x^2 + 4y^2 + z^2 + 2xy + xz - 2yz$ by $(-z + x - 2y)$.
7. If a, b, c are all non-zero and $a + b + c = 0$, prove that $\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab} = 3$.
8. If $a + b + c = 5$ and $ab + bc + ca = 10$, then prove that $a^3 + b^3 + c^3 - 3abc = -25$.
9. Prove that $(a + b + c)^3 - a^3 - b^3 - c^3 = 3(a + b)(b + c)(c + a)$.

Find the following product :

$(2x - y + 3z)(4x^2 + y^2 + 9z^2 + 2xy + 3yz - 6xz)$

Factorise :

(i) $a^3 - 8b^3 - 64c^3 - 24abc$ (ii) $2\sqrt{2}\,a^3 + 8b^3 - 27c^3 + 18\sqrt{2}\,abc$.

Without actually calculating the cubes, find the value of :

(i) $\left(\frac{1}{2}\right)^3 + \left(\frac{1}{3}\right)^3 - \left(\frac{5}{6}\right)^3$ (ii) $(0.2)^3 - (0.3)^3 + (0.1)^3$

Without finding the cubes, factorise

$(x - 2y)^3 + (2y - 3z)^3 + (3z - x)^3$

Find the value of

(i) $x^3 + y^3 - 12xy + 64$, when $x + y = -4$

(ii) $x^3 - 8y^3 - 36xy - 216$, when $x = 2y + 6$

Give possible expressions for the length and breadth of the rectangle whose area is given by $4a^2 + 4a - 3$.

Factorise the following :

(i) $9x^2 - 12x + 3$ (ii) $9x^2 - 12x + 4$

Expand the following :

(i) $(4a - b + 2c)^2$

(ii) $(3a - 5b - c)^2$

(iii) $(-x + 2y - 3z)^2$

Factorise the following :

(i) $9x^2 + 4y^2 + 16z^2 + 12xy - 16yz - 24xz$

(ii) $25x^2 + 16y^2 + 4z^2 - 40xy + 16yz - 20xz$

(iii) $16x^2 + 4y^2 + 9z^2 - 16xy - 12yz + 24xz$

If $a + b + c = 9$ and $ab + bc + ca = 26$, find $a^2 + b^2 + c^2$.

Expand the following :

(i) $(3a - 2b)^3$ (ii) $\left(\frac{1}{x} + \frac{y}{3}\right)^3$ (iii) $\left(4 - \frac{1}{3x}\right)^3$

Factorise the following :

(i) $1 - 64a^3 - 12a + 48a^2$

(ii) $8p^3 + \frac{12}{5}p^2 + \frac{6}{25}p + \frac{1}{125}$

Find the following products :

(i) $\left(\frac{x}{2} + 2y\right)\left(\frac{x^2}{4} - xy + 4y^2\right)$ (ii) $(x^2 - 1)(x^4 + x^2 + 1)$

Factorise :

(i) $1 + 64x^3$ (ii) $a^3 - 2\sqrt{2}b^3$

ANSWERS :

1. -1 **2.** $a = 5$; 62 **5.** $-120x^2y - 250y^3$ **6.** $x^3 - 8y^3 - z^3 - 6xyz$

CHAPTER -3 COORDINATE GEOMETRY

Short Answer Type Questions

1. Write the coordinates of each of the points P, Q, R, S, T and O from the Fig. 3.5.

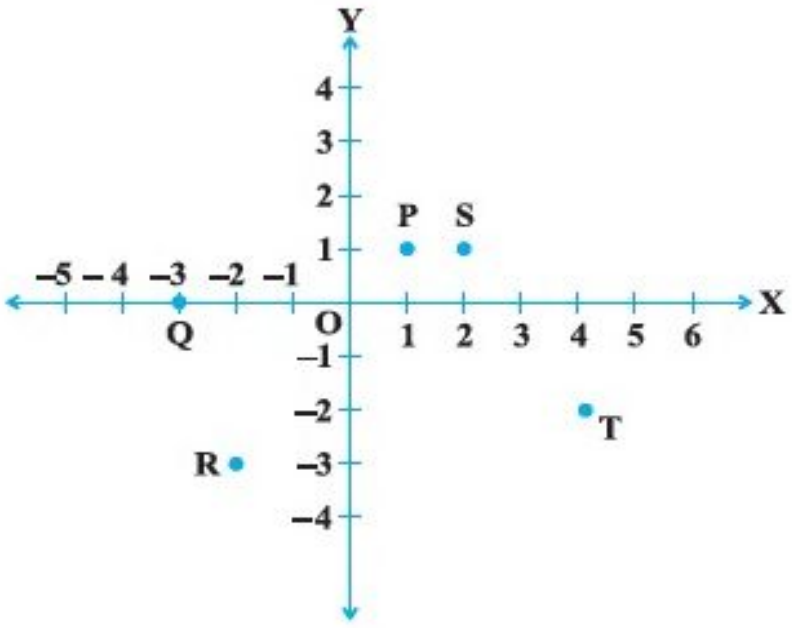


Fig. 3.5

2. Plot the following points and write the name of the figure obtained by joining them in order:

P(– 3, 2), Q (– 7, – 3), R (6, – 3), S (2, 2)

3. Plot the points (x, y) given by the following table:

x	2	4	– 3	– 2	3	0
y	4	2	0	5	– 3	0

4. Plot the following points and check whether they are collinear or not :

(i) (1, 3), (– 1, – 1), (– 2, – 3)

(ii) (1, 1), (2, – 3), (– 1, – 2)

(iii) (0, 0), (2, 2), (5, 5)

5. Without plotting the points indicate the quadrant in which they will lie, if

(i) ordinate is 5 and abscissa is – 3

(ii) abscissa is – 5 and ordinate is – 3

(iii) abscissa is – 5 and ordinate is 3

(iv) ordinate is 5 and abscissa is 3

Y

6. In Fig. 3.6, LM is a line parallel to the y-axis at a distance of 3 units.
   (i) What are the coordinates of the points P, R and Q?
   (ii) What is the difference between the abscissa of the points L and M?

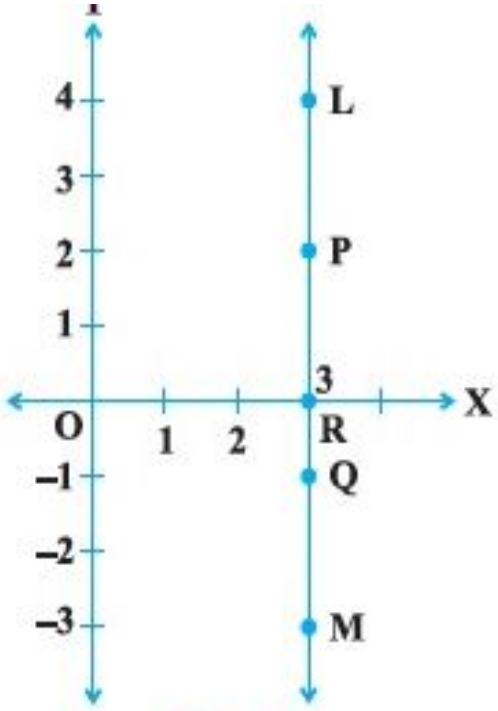


Fig. 3.6

7. In which quadrant or on which axis each of the following points lie?
   (– 3, 5), (4, – 1), (2, 0), (2, 2), (– 3, – 6)
8. Which of the following points lie on y-axis?
   A (1, 1), B (1, 0), C (0, 1), D (0, 0), E (0, – 1), F (– 1, 0), G (0, 5), H (– 7, 0), I (3, 3).
9. Plot the points (x, y) given by the following table. Use scale 1 cm = 0.25 units

x	1.25	0.25	1.5	– 1.75
y	– 0.5	1	1.5	– 0.25

10. A point lies on the x-axis at a distance of 7 units from the y-axis. What are its coordinates? What will be the coordinates if it lies on y-axis at a distance of –7 units from x-axis?
11. Find the coordinates of the point
    (i) which lies on x and y axes both.
    (ii) whose ordinate is – 4 and which lies on y-axis.
    (iii) whose abscissa is 5 and which lies on x-axis.
12. Taking 0.5 cm as 1 unit, plot the following points on the graph paper :
    A (1, 3), B (– 3, – 1), C (1, – 4), D (– 2, 3), E (0, – 8), F (1, 0)

ANSWERS :

1. P(1, 1), Q(–3, 0), R(–3, –2), S(2,1), T(4, –2), O(0,0)
2. Trapezium
4. (i) Collinear (ii) Not collinear (iii) Collinear
5. (i) II (ii) III (iii) II (iv) I
6. (i) P(3, 2), R(3, 0), Q(3, –1) (ii) 0
7. II, IV, x-axis, I, III
8. C, D, E, G **10.** (7, 0), (0, –7) **11.** (i) (0, 0) (ii) (0,– 4) (iii) (5, 0)

Long Answer Type Questions

1. Points A (5, 3), B (– 2, 3) and D (5, – 4) are three vertices of a square ABCD. Plot these points on a graph paper and hence find the coordinates of the vertex C.
2. Write the coordinates of the vertices of a rectangle whose length and breadth are 5 and 3 units respectively, one vertex at the origin, the longer side lies on the x-axis and one of the vertices lies in the third quadrant.
3. Plot the points P (1, 0), Q (4, 0) and S (1, 3). Find the coordinates of the point R such that PQRS is a square.
4. From the Fig. 3.8, answer the following:
   (i) Write the points whose abscissa is 0.
   (ii) Write the points whose ordinate is 0.
   (iii) Write the points whose abscissa is – 5.

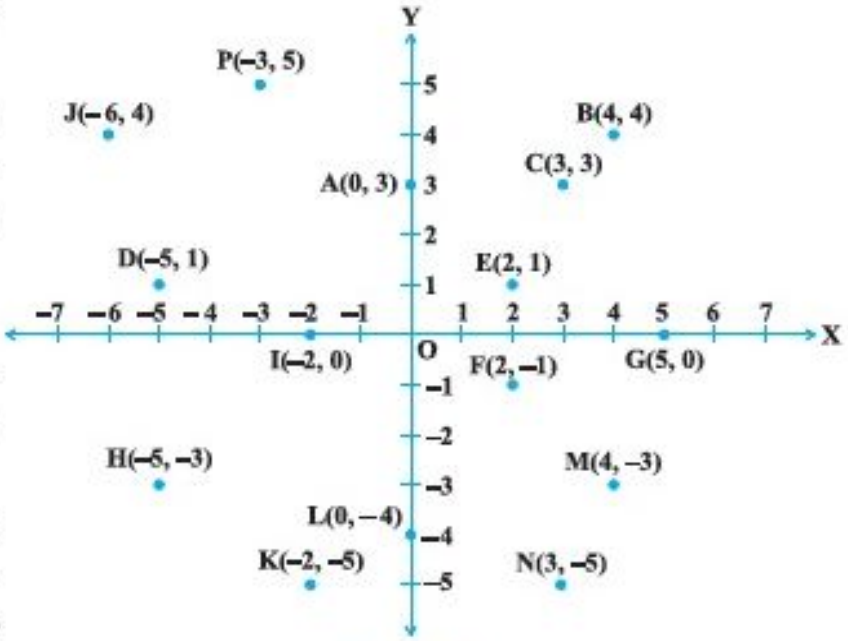


Fig. 3.8

5. Plot the points A (1, – 1) and B (4, 5)
   (i) Draw a line segment joining these points. Write the coordinates of a point on this line segment between the points A and B.
   (ii) Extend this line segment and write the coordinates of a point on this line which lies outside the line segment AB.

ANSWERS :

1. C(–2, – 4) **2.** (0, 0), (–5, 0), (0, –3) **3.** (4, 3)

4. (i) A, L and O
(ii) G, I and O
(iii) D and H

5. (i) (2, 1), (ii) (5, 7)