

Holiday Homework

Class – 9

1. We have, $\frac{7+3\sqrt{5}}{3+\sqrt{5}} - \frac{7-3\sqrt{5}}{3-\sqrt{5}} = a + \sqrt{5}b$
2. Represent $\sqrt{7.6}$ on the number line.
3. Represent $\sqrt{3}$ on number line.
4. Express $0.\overline{35}$ in the form of $\frac{m}{n}$, where m and n are integers and $n \neq 0$.
5. Find a and b, if $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a + b\sqrt{3}$.
6. Rationalise the denominator of $\frac{2\sqrt{6}-\sqrt{5}}{3\sqrt{5}-2\sqrt{6}}$.
7. Simplify the following $\frac{2}{\sqrt{5}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{2}} - \frac{3}{\sqrt{5}+\sqrt{2}}$.
8. Visualise $3.\overline{45}$ on the number line, upto 4 decimal places.
9. Factorise: $x^3 - 6x^2 + 11x - 6$.
10. Factorise: $2x^3 - x^2 - 13x - 6$.
11. Find the value of a and b so that $(x + 1)$ and $(x - 1)$ are factors of $x^4 + ax^3 - 3x^2 + 2x + b$.
12. By actual division, find the remainder when $2x^4 - 6x^3 + x^2 - x + 2$ is divided by $x + 2$.
13. If $ax^3 + bx^2 + x - 6$ has $x + 2$ as a factor and leaves remainder 4 when divided by $x - 2$, find the value of a and b.
14. Examine whether $x + 2$ is a factor $x^3 + 3x^2 + 5x + 6$ and of $2x + 4$.
15. Find the value of k, if $x - 1$ is a factor of $4x^3 + 3x^2 - 4x + k$.
16. Find the value of k if $x - 1$ is a factor of $2x^2 + kx + \sqrt{2}$.
17. For what value of a is the polynomial $x^3 + 2x^2 - 3ax - 8$ a multiple of $x - 4$?
18. Find the value of p for which the polynomial $2x^4 + 3x^3 + 2px^2 + 3x + 6$ is divisible by $x + 2$.
19. Determine the value of b for which the polynomial $5x^3 - x^2 + 4x + b$ is divisible by $1 - 5x$.
20. For what value of m is the polynomial $2x^4 - mx^3 + 4x^2 + 2x + 1$ divisible by $1 - 2x$?
21. Find the values of a and b so that the polynomial $x^3 + 10x^2 + ax + b$ is exactly divisible by $x - 1$ and $x + 2$.
22. If $x^3 + px^2 + qx + 6$ has $x - 2$ as a factor and leaves remainder 3 when divided by $x - 3$, find the values of p and q.

23. The polynomials $ax^3 + 3x^2 - 13$ and $2x^3 - 5x + a$ are divided by $x - 2$. The remainder in each case is the same. Find the value of a .
24. Find the value(s) of b if $b^2x^3 - bx^2 + 3bx - b$ is exactly divisible by $x - 3$.
25. Find a and b if $x - 1$ and $x - 2$ exactly divide the polynomial $x^3 + ax^2 - bx + 10$.
26. If $a + b = 7$ and $ab = 12$ find the value of $a^2 - ab + b^2$
27. If $a + b = 10$ and $ab = 21$ find $a^3 + b^3$
28. If $a - b = 4$ and $ab = 45$ find $a^3 - b^3$
29. If $a + b = 10$ and $ab = 16$ find the value of $a^2 - ab + b^2$ and $a^2 + ab + b^2$
30. If $a + b = 8$ and $ab = 6$ find $a^3 + b^3$
31. If $a - b = 6$ and $ab = 20$ find $a^3 - b^3$
32. If $a + b + c = 6$ and $ab + bc + ca = 11$ find the value of $a^3 + b^3 + c^3 - 3abc$
33. If $a + b + c = 15$ and $a^2 + b^2 + c^2 = 83$ find the value of $a^3 + b^3 + c^3 - 3abc$
34. If $x + y + z = 1$, $xy + yz + zx = 1$ and $xyz = -1$, find the value of $x^3 + y^3 + z^3$
35. If $x + y + z = 8$ and $xy + yz + zx = 20$, find $x^3 + y^3 + z^3 - 3xyz$
36. If $a + b + c = 9$ and $ab + bc + ca = 26$, find the value of $a^3 + b^3 + c^3 - 3abc$
37. If $a + b + c = 9$ and $a^2 + b^2 + c^2 = 35$, find $a^3 + b^3 + c^3 - 3abc$
38. If $x - 1/x = -1$, find $x^2 + 1/x^2$

39. Find the values of a and b in each of the following:

$$(i) \quad \frac{\sqrt{3}-1}{\sqrt{3}+1} = a+b\sqrt{3} \quad (ii) \quad \frac{3+\sqrt{2}}{3-\sqrt{2}} = a+b\sqrt{2} \quad (iii) \quad \frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a+b\sqrt{3} \quad (iv) \quad \frac{5+\sqrt{6}}{5-\sqrt{6}} = a+b\sqrt{6} \quad (v)$$

$$\frac{3+\sqrt{7}}{3-4\sqrt{7}} = a+b\sqrt{7}$$

40. If $\frac{\sqrt{5}-1}{\sqrt{5}+1} + \frac{\sqrt{5}+1}{\sqrt{5}-1} = a+b\sqrt{5}$, find $a \wedge b$

41. Simplify each of the following by rationalizing the denominator:

$$(i) \quad \frac{6-4\sqrt{2}}{6+4\sqrt{2}} \quad (ii) \quad \frac{3}{5-\sqrt{3}} + \frac{2}{5+\sqrt{3}} \quad (iii) \quad \frac{7\sqrt{3}-5\sqrt{2}}{\sqrt{48}+\sqrt{18}} \quad (iv) \quad \frac{2+\sqrt{3}}{2-\sqrt{3}} + \frac{2-\sqrt{3}}{2+\sqrt{3}}$$

42. Find the value of a and b in each of the following:

$$(i) \quad \frac{3+\sqrt{7}}{3-4\sqrt{7}}=a+b\sqrt{7} \quad (ii) \quad \frac{\sqrt{2}+\sqrt{3}}{3\sqrt{2}-2\sqrt{3}}=a-b\sqrt{6}$$

43. Simplify: $\frac{2\sqrt{6}}{\sqrt{2}+\sqrt{3}} + \frac{6\sqrt{2}}{\sqrt{6}+\sqrt{3}} - \frac{8\sqrt{3}}{\sqrt{6}+\sqrt{2}}$

44. Find the values of a and b in $\frac{5+2\sqrt{3}}{7+4\sqrt{3}}=a+b\sqrt{3}$

45. Simplify: $\frac{14\sqrt{3}}{\sqrt{10}+\sqrt{3}} - \frac{4\sqrt{5}}{\sqrt{6}+\sqrt{5}} - \frac{6\sqrt{2}}{\sqrt{15}+3\sqrt{2}}$

English:

1. Article
2. Story writing

SCRAPBOOK ACTIVITIES:

3. Research on, select and write any one poem by the following poets:
 - a. WB Yeats
 - b. Wordsworth
4. Read a story by any one of the following authors and write a critical appreciation/summary of the same:
 - a. 'O' Henry
 - b. Oscar Wilde

Holiday home work French 2019-20

Class IX

- 1) 2 grammar exercises in NB of every grammar topic taught.
- 2) Describe how your school celebrated the cultural fest Fuchsia.
- 3) Make a family tree and describe everyone with their physical description and their qualities.

Art :

Topic-Make any folk art of India

Size-A3

Medium-Poster/Acrylic colours

Science :

Make a working model on pressure /gravitation or its application.or Any Innovative idea from the syllabus (Individual or group of 2 to 5 students can make

Hindi :

1. प्रेमचंद, कृष्णा सोबती, कमलेश्वर, मन्नू भंडारी, इस्मत चुगताई, उषा प्रियंवदा, जयशंकर प्रसाद इत्यादि लेखकों की कोई 5 कहानी पढ़ना एवं 10 से 15 पंक्तियों में सार लिखना ।
2. कक्षा प्रस्तुतिकरण- आपको कौनसी कहानी सर्वश्रेष्ठ लगी एवं क्यों?
3. छोट्टियों में की गई किसी यात्रा का चित्रसहित वर्णन ।
4. परियोजना कार्य - अलंकार

Vocational :

Media

Draw or paste two landscapes or theme based pictures which you can create in photoshop and specify the tools, effects and steps required in photoshop for creating the same.

Food production

Draw a chart on various department of hotel industry.

Sst

1. Civics- Chapter 4, Electoral Politics

Prepare a bulletin board/ collage comprising a comprehensive coverage of Lok Sabha elections 2019.

It's an individual activity.

Submit the activity on 1 July.

2. Disaster Management project

Do any one of the following:-

Project 1_ Role of Govt./Non-Government functionaries in your locality in Disaster Management.

Interview any two of the Govt. /Non-Government functionaries in your locality on their role in Disaster Management.

Senior District Magistrate

Additional District Magistrate

Sarpanch/MP/MLA

Head of any NGO working in your locality – dealing in Disaster Management

Police inspector, Superintendent of Police

Civil Defence Warden/elected representatives

Home guard personnel

NCC Commandant in the school

Deputy Commissioner of Municipality

School Principal

Carry out a survey by enquiring from at least 20 persons from different walks of life (such as shopkeepers, housewives, senior citizens, college students, etc.) in your locality on the hazards prevalent, and preventive measures they have taken or would like to take to reduce the impact.

Prepare a Survey report highlighting the areas where awareness is needed and the local resources available in the locality to create awareness.

Project 2: Generating Awareness on Disaster Management

Design a 10 minute skit on Disaster Management. Design posters on do's and don'ts of various hazards prevalent in that area.

Visit a slum community and enact the skit by using the posters. The Skit and the posters can also be used to make the junior students aware.

PROJECT 3 – Preparation of Models of Disaster Resilient Structures

Make layouts of models based on structural improvement in buildings in a rural/ urban community in coastal areas prone to floods/cyclones or in areas prone to earthquakes/landslides. Show the special features of the buildings and indicate the early warning system that could be best used in that community.

PROJECT 4 – Pocket Guide on First Aid

Prepare a pocket guide on First Aid for your school. The First Aid pocket guide should contain aid that needs to be given for fractures, poisoning, cuts and burns, heat and cold wave and other threats that are prevalent in that area. The content shared in the guide should be supported with adequate pictures so as to give a clear and elaborate understanding about the topic. Choose awareness campaign strategy for either senior citizens or illiterate people and prepare a brief write-up.

PROJECT 5 – Institutional Case Study on Disaster Response

Visit a local NGO/agency such as the United Nations, Red Cross/ Voluntary Youth Organisations like Nehru Yuva Kendra Sangathan (NYKS), National Cadet Corp (NCC), Bharat Scouts and Guides etc; and prepare a case study on how the agencies played a major role in Disaster Response.

PROJECT 6 – Communication facilities for Disaster Management

Choose any one method of communication from various means of communication like radio/satellite/television/ Ham radio which are used by Government departments such as the Indian Meteorological Department to disseminate information. Find out how the information is disseminated by them at various levels during disasters. Prepare a report.

PROJECT 7: Preparation of Disaster Contingency Plan

Prepare a Contingency Plan either for your school or home/community.. The Plan should be based on an actual survey of your area/locality or school. The Plan prepared should consist of the following maps, inventory of resources available and a seasonality calendar highlighting the seasons prone to various hazards prevalent in that locality/school.

- A social map
- A Resource map
- A Vulnerability map on the outline map of your locality.