

Holidays Homework for Class – 9th – 2018-19

Q:1. Make a chart on the rules for the change of tenses in reported speech.

Q:2. Read the poem ‘The Lake Isle of Innisfree’ carefully. Explain each line of the poem in detail.

Q:3. Describe Albert Einstein’s contributions in the field of science.

Q:4. Develop a short story in about 150-200 words using the following hints.
sister returning from abroad — hard journey — a five day long trek — coldest year of the decade — overcame
thoughts of giving up — raw nature — survived critical conditions.
Underline modals, determiners and preposition used in the story with different colours.

Q:5. Write diary entry of atleast seven interesting days of your summer vacations.

1- dN ioʻrkj ksg; ka dsuke fy[kdj mudsfp= fpidk, A
 2- /kny 'kN lsl cfi/kr dkbz ikp egkojsfy[kdj okD; cuk, A
 3- ikB ds vfrfjDr jghe th ds dN vl; nkg sfy[kA
 4- yf[kdk egknsh oekZ ds *fxYy* l lej.k ds vfrfjDr dN vl; l lej.k ka dsuke fy[kA
 5- ekckby Oku ds fy, , d vld'kd fokkiu cuk, A

Q:1. Express $0.34 - 0.2 + \overline{0.62}$ in $\frac{p}{q}$ form.

Q:2. Find the value of $x : \sqrt[3]{x^2 + 2} = 3$

Q:3. Prove that $\left(\frac{x^\ell}{x^m}\right)^{\frac{1}{\ell m}} \times \left(\frac{x^m}{x^n}\right)^{\frac{1}{mn}} \times \left(\frac{x^n}{n^\ell}\right)^{\frac{1}{n\ell}} = 1$

Q:4. Prove that $\frac{9^n \times 3^2 \times \left(3^{\frac{-n}{2}}\right) - (27)^n}{3^{3m} \times 2^3} = \frac{1}{27}$

Q:5. If $a^p = b^q = c^r$ and $b^2 = ac$, prove that $q = \frac{2rp}{r+p}$

Q:6. If $abc = 1$, show that $\left(1 + a + \frac{1}{b}\right)^{-1} + \left(1 + b + \frac{1}{c}\right)^{-1} + \left(1 + c + \frac{1}{a}\right)^{-1} = 1$

Q:7. If $\left(\frac{x^6 y^{-3}}{x^{-2} y^3}\right)^{\frac{-1}{2}} \div \left(\frac{x^{-1} y^2}{x^3 y^{-2}}\right)^{\frac{1}{3}} = x^a \cdot y^b$, then find the value of $a + b + 1$.

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Q:8. If $ab + bc + ca = 0$, find the value of $\frac{1}{a^2 - bc} + \frac{1}{b^2 - ca} + \frac{1}{c^2 - ab}$

Q:9. Prove that $\frac{5^{28} + 5^{27} + 5^{26}}{5^{29} + 5^{28} - 5^{27}} = \frac{31}{145}$

Q:10. Prove that $\frac{1}{1 + \sqrt{2}} + \frac{1}{\sqrt{2} + \sqrt{3}} + \frac{1}{\sqrt{3} + \sqrt{4}} + \frac{1}{\sqrt{4} + \sqrt{5}} + \sqrt{5} - 1 = 0$

Q:11. Prove that $(x + y)^3 + (y + z)^3 + (z + x)^3 - 3(x + y)(y + z)(z + x) = 2(x^3 + y^3 + z^3 - 3xyz)$

Q:12. Prove that $(a + b + c)^3 - a^3 - b^3 - c^3 = 3(a + b)(b + c)(c + a)$

Q:14. If $x^2 + y^2 + z^2 = 16$, $xy + yz + zx = 10$, find the value of $x + y + z$.

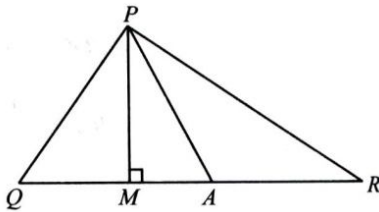
Q:15. Find the value of $x^3 + xy^3 - 36xy - 216$ when $x = 2y + 6$

Q:16. Without actual division prove that $2x^4 - 5x^3 + 2x^2 - x + 2$ is divided by $x^2 - 3x + 2$.

Q:17. Use factor theorem to show that $(x + 2)(x - 1)$ is a factor of the polynomial $p(x) = x^4 + x^3 + 2x^2 + 4x - 8$.

Q:18. In the given figure, $\angle Q > \angle R$, PA is the bisector of $\angle QPR$ and $PM \perp QR$,

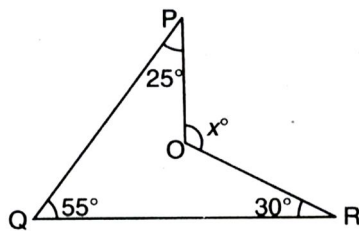
prove that $\angle APM = \frac{1}{2}(\angle Q - \angle R)$



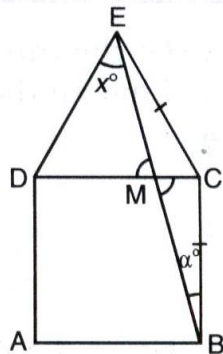
Q:19. A, B and C are the interior angles of a ΔABC , BO and CO are the bisectors of $\angle B$ and $\angle C$,

prove that $\angle BOC = 90^\circ + \frac{1}{2} \angle A$.

Q:20. Find the value of x .



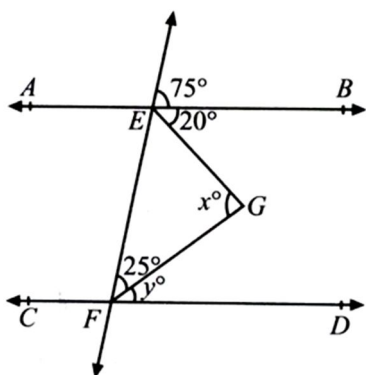
Q:21. In the given figure, an equilateral ΔEDC surmounts the sequence ABCD. Find the value of x .



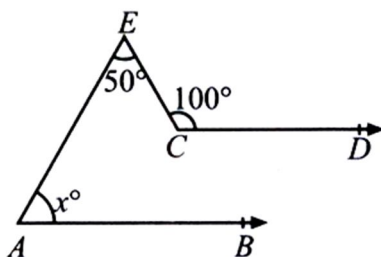
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Q:22. In figure, $AB \parallel CD$, find x and y .

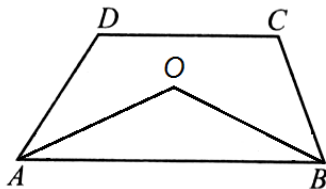


Q:23. Find x in the given figure.



Q:24. ABCD is a quadrilateral in which AO and BO are the bisectors of $\angle A$ and $\angle B$ respectively. Prove that

$$\angle AOB = \frac{1}{2}(\angle C + \angle D).$$



Q:25. The sum of two angles of a triangle is 116° and their difference is 24° . Find all the angles of the triangle.

Activity 1 To construct a square root spiral that depicts the square root of natural numbers

$$\sqrt{1}, \sqrt{2}, \sqrt{3}, \sqrt{4}, \dots$$

Activity 2 To verify the angles sum property of a triangle, using method of paper cutting and pasting.

Activity 3 To verify that diagonals of the parallelogram bisect each other using triangle cutouts.

SCIENCE

Physics:-

Q:1. Solve 5 numericals on each of the following topics:-

1. Average speed
2. Equations of motion (5 on each equation)
3. Uniform circular motion

Q:2. Solve textual questions of Unit-1 (Motion)

Q:3. Activity:-

Make a paper scale of least count (i) 0.2 cm, (ii) 0.5 cm

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Chemistry

- Q:1. Explain the following terms with one example in each case (i) Rigidity, (ii) Compressibility, (iii) Fluidity.
- Q:2. What happens when?
- (i) You exercise vigorously.
 - (ii) Carbon dioxide gas is compressed at room temperature and the pressure suddenly released.
 - (iii) Grapes are kept in a thick sugar syrup.
- Q:3. What is the melting point of rain water? If instead of rain water you are provided with sea water, will the melting point increase or decrease? Give reason.

Biology

- Q:1. Make a chart of plant cell and animal cell.
- Q:2. Practice diagrams of cell and its organelles.
- Q:3. What are Prokaryotic and Eukaryotic cells? Write a detailed account upon these types of cells.
- Q:4. Which cell organelle is the 'power house' of the cell and why?
- Q:5. Why is the plasma membrane called a selectively permeable membrane?
- Q:6. Why is the cell called the structural and functional unit of life?
- Q:7. How do substance like CO₂ and water move in and out of the cell? Discuss.
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SOCIAL SCIENCE

- Q:1. Why is India known as a country having all major geographical features of the world? Explain.
- Q:2. Explain the political system under the constitution of 1971 through a figure.
- Q:3. What are the features of Green Revolution? How is it different from traditional farming?
- Q:4. On an outline map of India, locate and label the following:-
- 1. Any three mountain ranges
 - 2. Any three plateaus
 - 3. Any three coastal plains
- Shade each with different colours.*
- Q:5. On an outline map of world, locate and label major countries of First World War.
- Q:6. Make a wall magazine on the making of the Indian constitution. (Roll No. 1 to 15)
- Q:7. Make a wall magazine on the impact of unemployment. (Roll No. 16 onwards)

Note:- Learn the syllabus covered in the class.