

WINTER'S HOLIDAYS HOMEWORK

Subject - mathematics

Class 7th

INSTRUCTIONS:

DO YOUR WORK NEATLY.

DO THE SOLUTIONS ON LOOSE SHEETS.

DON NOT WRITE THE QUESTIONS.

1. Write a pair of integers whose sum is -3.
2. Write additive and multiplicative inverse of $-\frac{1}{3}$.
3. Evaluate: $36 \div [(-4) + 10]$.
4. Form the algebraic expression using variables, constants and arithmetic operations:
5 times x subtracted from 1..
5. Find the ratio of the 3m : 35cm
6. If X, 12, 8 and 32 are in proportion then find value of X.
7. find x, if

$$\left(\frac{2}{3}\right)^{2x} \times \left(\frac{2}{3}\right)^3 = \left(\frac{2}{3}\right)^{11}$$

8. Two complementary angles are in the ratio Of 2 : 7, find the angles.
9. Draw the net for a cone.
10. Using laws of exponents, simplify and write the answer in exponential form

(i) $2^3 \times 2^4 \times 2^5$ (ii) $5^{12} \div 5^3$ (iii) $(7^2)^3$ (iv) $(3^2)^5 \div 3^4$

11. The marks (out of 100) obtained by a group of students in science test are 85, 76, 90, 84, 39, 48, 56, 95, 81 and 75. Find the

(i) Highest and the lowest marks obtained by the students.

(ii) Range of marks obtained.

(iii) Mean marks obtained by the group.

12. The production of saleable steel in some of the steel plants of our country during 1999 is given below:

Plant	Bhilai	Durgapur	Rourkela	Bokaro
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Production (In thousand tonnes)	160	80	200	150
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Construct a bar graph to represent the above data on a graph paper by using the scale
1 big division = 20 thousand tonnes.

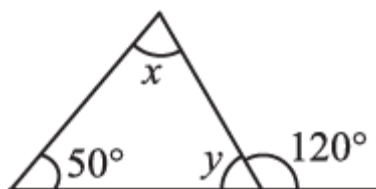
13. (i) Name any two figures that have both line of symmetry and rotational symmetry.

(ii) Draw the line of symmetry in the following figures:



14. If the angles of a triangle are in the ratio 2 : 1 : 3, find the angles. classify the triangle in two different ways.

15. Find the values of the unknowns x and y in the following diagrams:



16. Find the simple interest on rupees 1500 at 6% per annum for 3 years, also find the amount.

17. 40% of the population of a town are men and 39% are women. If the number of children is 12,600, find the number of men.

18. A bus consumes 25 liter of diesel in covering a distance of 90 kilometers. How much diesel is needed to cover 288 kilometers?

19. Two equal sides of an isosceles triangle are $3x - 1$ units and $2x + 2$ units. The third side is $2x$ units. Find x and the perimeter of the triangle.

20. (i) write down the coefficient of x in $-2xyz$.

(ii) show the terms and their factors by tree diagram of the expression $xy + 2x^2y^2$.

21. A boy scored the following marks in various class test during a year,;

17 16, 7, 9, 12, 14, 16, 3 19 12 16

(i) Arrange the marks in ascending order.



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- (ii) What are his model marks?
- (iii) Construct the frequency distribution table for the above data.

22. A tree is broken at a height of 5m from the ground and its top touches the ground at a distance of 12m from the base of the tree. Find the original height of the tree.

23. (i) convert 0.025 to fractions(in simplest form).

(ii) by how much does the sum of 17.443 and 29.657 exceed the sum of 13.687 and 18.548?

(iii) find $\frac{2}{5}$ of 1 kg.

24.(i) solve and verify :

(I). $(x - 1) = x + 2$

(ii) convert $\frac{2}{5}$ into %.

(iii) convert 25% into decimal.

25. (i) find value of x: $2(x + 3) = 54$

(ii) Write down the degree of the given polynomial :

$$2x^4 - 3x^2 - 1$$

iii) WRITE 8930000000 in the standard form.

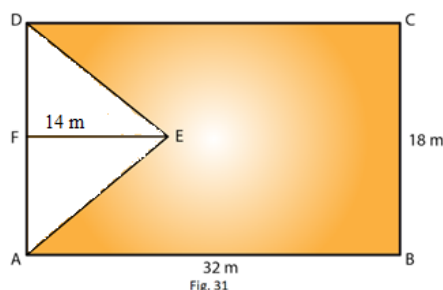
iv) find 3 rational numbers between -1 and 1.

26. (i) The sum of two rational numbers is -1. if one of them is $-\frac{5}{7}$, then find the other.

(ii) If each side of a regular hexagon is 3.5 centimeter , then find the perimeter of the hexagon.

(iii) simplify : If $\frac{2}{3}$ of a number is 6, then find the number.

27. In the given figure, ABCD is a rectangle with dimensions 32 m by 18 m. ADE is a triangle such that $EF \perp AD$ and $EF = 14$ cm. Calculate the area of the shaded region.



28. 1. Find the value of expression $x^3 + y^3$ when $x = 2$ and $y = -2$.

li. Write the degree of the polynomial $3x^3y - 5xy^4 - 2x + 1$.



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lii. In $-7xy^2z^3$, write down the coefficient of $7x$.

lv. Write the numerical coefficient in $5-3t^2$.

V. Write down number 279414 expanded exponential form.

29. Write the following rational numbers in an ascending order:

1. $-1/3, -2/9, -4/3$

2. Find : $5/63 - (-6/21)$

3. $(-7/12) \div (-2/13)$

4. the Cost of one metre cloth is ₹58.50 find the cost of 3.6 metre cloth.

30. The length of a rectangular plot is 6 m less than thrice its breadth. Find the dimensions of the plot if its perimeter is 148 m.

