



*Happy
Holidays*



A festive graphic featuring the text "Happy Holidays" in a black, elegant cursive script. The word "Happy" is on the top line, and "Holidays" is on the bottom line. To the left of the text is a small cluster of green holly leaves and three red berries. Below the text is a decorative red ribbon flourish that curves under the word "Holidays".



RED ROSE SENIOR SECONDARY SCHOOL

HOLIDAY HOMEWORK

CLASS-VIII

2020-21



General Guidelines for Students:

- 1. Do the homework in the WORKSHEET notebook.**
 - 2. Presentation carries marks.**
 - 3. Number the questions in serial order.**
 - 4. Draw neat diagrams wherever necessary and label the parts neatly and clearly.**
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Linear Equations in One Variable

Solve the following equations:

1) $x = \frac{4}{5}(x + 10)$

2) $\frac{2x}{3} + 1 = \frac{7x}{15} + 3$

3) $x + 7 - \frac{8x}{3} = \frac{17}{6} - \frac{5x}{2}$

4) $m - \frac{m-1}{2} = 1 - \frac{m-2}{4}$

5) $\frac{3t-2}{4} - \frac{2t+3}{3} = \frac{5}{6} - t$

6) $\frac{5x-3}{3x+5} = \frac{3}{5}$

7) $\frac{x}{3} + \frac{4}{3} = \frac{2}{3}(4x - 1) - \left[2x - \frac{x+1}{3}\right]$

8) $\frac{17-3x}{5} - \frac{4x+2}{3} = 5 - 6x + \frac{7x+14}{3}$

9) $(5x - 1)(x + 3) - (x - 5)(5x + 1) = 40$

10) $\frac{y-(7-8y)}{9y-(3+4y)} = \frac{2}{3}$

2. The sum of four consecutive odd numbers is 368. Find its numbers

3. A number consisting of two digits becomes $\frac{5}{6}$ of itself, if its digits are interchanged. If the difference of the digits is 1, find the number.

4. 5 years ago, father's age was 7 times the age of his son. 5 years later, the father's age will be 3 times the age of his son. Find their present ages.

5. One number is 4 times the other number. If 6 is added to the smaller number and 4 is added to the larger number, then the later number becomes twice the other number. Find the numbers.

6. Angle C of a triangle ABC is the sum of the other two angles A and B. If the ratio of $\angle A$ and $\angle B$ is 3:2, find the measure of all the three angles.

7. A number is as much greater than 31 as is less than 81. Find the number.

8. A number consists of two digits whose sum is 5. If we add 9 with the number, the digits in the number are interchanged.

9. 10 years ago, a man's age was 6 times the age of his son. 12 years later, the age of the son will be 27 years. What is the present age of the father ?

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10. The perimeter of a rectangle is 9 times its breadth. If its length is 3cm more than twice its breadth, find the dimensions of the rectangle.
11. The ages(in years) of Ram and Shyam are in the ratio 5:7. If Ram is 9 years older and Shyam is 9 years younger. The age of Ram would have been twice the age of Shyam. Find their ages.

Solve the following equations.

1. $\frac{3x}{5} = 15$
3. $8x - 4(x - 3) = 2x$
5. $2 - 3(3x + 1) = 2(7 - 6x)$
7. $\frac{4}{3x} - \frac{3}{4x} = 7$
9. $\frac{5x}{4} - \frac{x-1}{2} = \frac{x-1}{3}$
11. $5y - \frac{y+1}{3} = 6y + \frac{1}{5}$
13. $2\frac{1}{3} - \frac{x-2}{4} = \frac{x-1}{6}$
15. $\frac{2x-5}{5x+2} = \frac{3}{22}$
17. $\frac{4x-3}{2x+6} = \frac{3}{2}$
19. $\frac{3y - (8 - 5y)}{7y - (3 + 2y)} = 2$
21. $\frac{\frac{x}{4} - \frac{3}{5}}{\frac{4}{3} - 7x} = \frac{-3}{20}$
23. $\frac{8x+3}{2(x-2)} = \frac{4x}{x-5}$
25. $\frac{x+a}{x-a} = \frac{b-a}{b+a}$
2. $\frac{7x-5}{2x} = 3$
4. $\frac{3}{4}y + 2y = \frac{1}{2} + 4y - 3$
6. $0.3(6 + x) = 0.4(8 - x)$
8. $\frac{2}{5x} - \frac{5}{2x} = \frac{1}{10}$
10. $\frac{3-5x}{7} - \frac{x}{4} = \frac{1}{2} + \frac{5-4x}{8}$
12. $\frac{3(x-1)}{4} - 2 = 5x - \frac{x-2}{2}$
14. $\frac{4x-2}{3} - \frac{23}{3} = 13 - 5\left(\frac{7x+5}{3}\right)$
16. $\frac{5-7x}{2(1+2x)} = -\frac{8}{7}$
18. $\frac{15(5-x) - 7(x+9)}{1-5x} = 4$
20. $\frac{(x+1)(x+2)}{(x+11)(x-2)} = 1$
22. $\frac{\frac{3}{4}x+7}{\frac{2}{5}x-4} = \frac{5}{4}$
24. $\frac{4x-5}{x+2} = \frac{8x-1}{2x+1}$

1. The difference of two numbers is 15 and their ratio is 3:2. Find the numbers.
2. One-sixth of a certain number decreased by 4 is equal to 1. Find the number.
3. Four-fifths of a number is 20 less than the original number. Find the number.
4. One number is 3 times another number. If 15 is added to both the numbers, then one of the new numbers becomes twice that of the other new number. Find the numbers.
5. Three numbers are in the ratio 2:3:4. If the sum of the largest and the smallest equals the sum of the third and 33, find the numbers.
6. Two numbers are such that the ratio between them is 3:5. If each is increased by 5, the ratio between the new numbers so formed is 2:3. Find the original numbers.
7. Find three consecutive even numbers whose sum is 186.
8. Find three consecutive odd numbers whose sum is 165.
9. The sum of three consecutive multiples of 7 is 777. Find these multiples.
10. The numerator of a fraction is 3 less than the denominator. If both the numerator and denominator are increased by 2, the new fraction becomes $\frac{6}{7}$. Find the original fraction.
11. The denominator of a rational number is greater than its numerator by 3. If numerator is increased by 14 and denominator is decreased by 3, the new number becomes $\frac{11}{4}$. What is the original number?
12. A number has two digits. The digit at tens place is four times the digit at units place. If 54 is subtracted from the number, the digits are reversed. Find the number.
13. Sum of the digits of a two-digit number is 9. The number obtained by interchanging the digits exceeds the given number by 27. Find the original number.
14. The length of a rectangle exceeds the breadth by 6 cm. If the length is increased by 3 cm and breadth decreased by 2 cm, the area remains the same. Find the length and breadth of the rectangle.
15. The angles of a triangle are $3x^\circ$, $(2x + 20)^\circ$ and $(5x - 40)^\circ$. Find the angles. Hence show that the triangle is an equilateral triangle.
16. One angle of a triangle is equal to the sum of the other two. If the ratio of the other two angles is 7:8, find the angles of the triangle.
17. The altitude of a triangle is three-fifth of the length of the corresponding base. If the altitude is decreased by 4 cm and the corresponding base is increased by 10 cm, the area of the triangle remains the same. Find the base and the altitude of the triangle.



Q 1 Solve: $-3(x+2) = -12$

Q 2 $5a + 5 = 20$

Q 3 $-2 + g = 7$

Q 4 $7a + 2 = -12$

Q 5 If $3x + 2 = 12$, then find the value of $6x + 4$.

Q 6 Solve the following equation: $2(7b + 12) = 24$

Q 7 $4 - 5x = -21$

Q 8 If $11x - 7 = 26$, then find the value of the expression $(x - 3)$.

Q 9 Sum of three consecutive even integers is 270. Find the integers.

Q 10 Sum of two numbers is 52; if second number is 10 more than first, find the number.

Q 11 Sum of three consecutive multiples of 7 is 777 find the numbers.

Q 12 The ratio of two complementary angles is 4 : 5. Find these angles and ratio of their supplementary angles.

Q 13 Nisha has rectangular plot of land that has been fenced with 300m long wires. Find the dimensions of the plot, if its length is twice the breadth.

Q 14 The length of a rectangle is 15 cm more than its width. The perimeter is 150 cm. Find the dimensions of the rectangle.

Exponents & Powers

1. Find the value of each of the following

a. 13^2

b. 5^3

c. 2^4

d. 11^2

e. $(-3)^3$

f. $(-1)^6$

2. Simplify

a. 3×10^2

b. $2^5 \times 5^3$

c. 0×10^4

d. $\left(\frac{3}{4}\right)^3$

e. $\left(\frac{-2}{3}\right)^4$

3. Express each of the following in exponential form

a. $\left(\frac{-5}{7}\right) \times \left(\frac{-5}{7}\right) \times \left(\frac{-5}{7}\right) \times \left(\frac{-5}{7}\right)$

b. $-5 \times -5 \times -5$

c. $x \times x \times x \times x \times a \times a \times b \times b \times b$

d. $(-2) \times (-2) \times (-2) \times (-2) \times a \times a \times a$

4. Express each of the following numbers as a product of powers of their prime factors.

a. 36

b. 675

c. 392

d. 864

e. 450

f. 1800

5. Using laws of exponents, simplify

(i) $3^6 \times 3^5$

(ii) $(7^2)^3 \div 7^3$

(iii) $2^{20} \div 2^5$

(iv) $2^4 \times 5^4$

(v) $(2^0 + 3^0)(4^0 + 6^0)$

(vi) $\frac{7^2}{5^3}$

6. Simplify and express each of the following in exponential form :

(i) $\frac{2^{15}}{2^7 \times 2^3}$

(ii) $(3^5 \times 3^2)^3$

(iii) $[(2^3)^4 \times 2^8] \div 2^{12}$

(iv) $\frac{5^4 \times x^{10} y^5}{5^4 \times x^7 y^4}$

(v) $\left(\frac{2}{3}\right)^5 \times \left(\frac{3}{5}\right)^5$

(vi) $\frac{9^8 \times (x^2)^5}{(27)^4 \times (x^3)^2}$

(vii) $\frac{3^2 \times 7^8 \times 13^6}{21^2 \times 91^3}$

(viii) $\frac{10 \times 5^{n+1} + 25 \times 5^n}{3 \times 5^{n+2} + 10 \times 5^{n+1}}$

7. Write the numbers in expanded forms :

a) 20068

(b) 423719

(c) 680071

(d) 5004132

8. Find the number :

(a) $5 \times 10^5 + 4 \times 10^4 + 2 \times 10^3 + 3 \times 10^0$

(b) $9 \times 10^6 + 8 \times 10^4 + 7 \times 10^2 + 6 \times 10^0$

(c) $3 \times 10^4 + 4 \times 10^3 + 5 \times 10^0$

9. Express in the standard form :

(a) 3,18,65,00,000

(b) 786.3×10^4

(c) 5,00,00,000

(b) 42634.7

(d) 4786. 3460

10. Write the numbers in the usual form :

(a) 4.83×10^7

(b) 3.64×10^5

(c) 7.3×10^3

Exponents (Powers)

1. Simplify and write in exponential form:

a. $(-5)^3 \times (-5)^4$

b. $P^3 \times P^{-10}$

c. $3^5 \times 3^{-10} \times 3^6$

d. $(2^5 \div 2^8)^5 \times 2^{-5}$

e. $(-4)^{-3} \times (5)^3 \times (-5)^{-3}$

f. $(-3)^4 \times \left(\frac{5}{3}\right)^4$

g. $\frac{1}{8} \times 3^{-5}$

h. $(-4)^5 \div (4)^8$

2. Find the value of:

a. $\left(\frac{2}{3}\right)^{-2}$

b. $\left[\left(\frac{1}{3}\right)^{-2} - \left(\frac{1}{2}\right)^{-3}\right] \div \left(\frac{1}{4}\right)^{-2}$

c. $\left(\frac{5}{8}\right)^{-7} \times \left(\frac{8}{5}\right)^{-5}$

d. $(3^0 + 4^{-1}) \times 2^2$

$(2^{-1} \times 4^{-1}) \div 2^{-2}$

f. $\left(\left(\frac{1}{2}\right)^{-2} + \left(\frac{1}{3}\right)^{-2} + \left(\frac{1}{4}\right)^{-2}\right)$

g. $(3^{-1} + 4^{-1} + 5^{-1})^0$

h. $\left\{\left(\frac{-2}{3}\right)^{-2}\right\}^2$

i. $\frac{8^{-1} \times 5^3}{2^{-4}}$

j. $(5^{-1} \times 2^{-1}) \times 6^{-1}$

k. $\left\{\left(\frac{1}{3}\right)^{-1} - \left(\frac{1}{4}\right)^{-1}\right\}^{-1}$

l. $\left(\frac{5}{8}\right)^{-7} \times \left(\frac{8}{5}\right)^{-4}$

m. $\frac{25 \times t^{-4}}{5^{-3} \times 10 \times t^{-8}}$

n. $\frac{3^{-5} \times 10^{-5} \times 125}{6^{-5} \times 6^{-5}}$

3. Evaluate :

a. 3^{-2}

b. $(-4)^{-2}$

c. $\left(\frac{1}{2}\right)^{-5}$

d. $1/3^{-2}$

e. 2^{-3}

4. Find the multiplicative inverse of the following :

a. 2^{-4}

b. 10^{-5}

c. 7^{-2}

d. 5^{-3}

e. 10^{-100}

5. If $\frac{m}{n} = \left(\frac{5}{7}\right)^4 \div \left(\frac{5}{7}\right)^0$ Find the value of $\left(\frac{m}{n}\right)^2$ if $m = -3$ $n = 4$

6. Find the value of x^{-2} if $x = \left(\frac{-2}{5}\right)^{-3} \div \left(\frac{5}{6}\right)^0$

7. What should $\left(\frac{7}{9}\right)^{-3}$ be divided so that the quotient becomes 9?

8. What should $\left(\frac{2}{5}\right)^4$ be multiplied so that product becomes 25?

9. Express each of the following rational number in exponential form:

a. $\frac{1}{343}$

b. $\frac{-25}{216}$

c. $\frac{64}{27}$

d. $\frac{243000}{729000}$

10. Simplify and express the result as powers of 2:

a. $\{(\frac{1}{2})^3\}^4 \div \{(\frac{1}{2})^4\}^3$

b. $(3^0 + 5^0) \div (4^0 + 2^0)$

11. Express the following as a rational number:

i. $(\frac{-7}{8})^2$

ii. $(\frac{-2}{7})^3$

iii. $(\frac{4}{-5})^4$

iv. $(\frac{11}{8})^3$

v. $(\frac{-2}{3})^3$

vi. $(\frac{-5}{-7})^2$

12. Express the following as a rational numbers in power notation:

i. $\frac{81}{256}$

ii. $\frac{-27}{125}$

iii. $\frac{-216}{-512}$

iv. $\frac{-16}{81}$

v. $\frac{256}{6561}$

vi. $\frac{1}{-3125}$

vii. $\frac{1}{64}$

viii. $\frac{100}{9261}$

13. Simplify:

i. $[-1/3 - (7/5)^2] \times (3/5)^2$

ii. $(-3/8)^3 \times 4^3 \times (2/3)^2$

iii. $[(4/5)^2 + (5/-7)^2] \times (2/5)^2 \div (-4/5)^3$

iv. $(-3/8)^2 \times (5/6)^3 \div [(\frac{-5}{3})^4 - (\frac{2}{3})^5] \div (4/9)^2$

14. Find the reciprocal of:

i) $(-7/3)^2$

ii) $(\frac{2}{3})^5$

iii) $(-6)^3$ iv) $(2/-3)^3$

$\times (3/-4)^2$

v) $(2/3)^2 \times (3/4)^2$

15. Find the absolute value of :

i) $(2/3)^3$

ii) $(-4/7)^2$

iii) $((5/-8)^3$

iv) $(-11/13)^2$

16. Which of the two rational numbers $(-3/5)$ and $(3/5)$ is smaller? Insert four rational numbers between them.

17. Find the product of the cube of $(-2/3)$ and the square of $(4/-5)$.

18. Fill in the blanks:

i) $(-2)^4 \times (-2)^5 = (-2)^{\text{---}}$

ii) $(-3)^{11} \div (-3)^{15} = (1/-3)^{\text{---}}$ iii) $(4^2)^3 =$

(4) ---

iv) $(-\frac{2}{5})^6 \div (-\frac{2}{5})^2 = (-\frac{2}{5})^{\text{---}}$

$$v) \left(\frac{4}{-5}\right)^4 \times \left(\frac{4}{-5}\right)^7 = \left(\frac{4}{-5}\right)^{\underline{\hspace{1cm}}}$$

$$vi) [(-6)^3]^4 = (-6)^{\underline{\hspace{1cm}}}$$

9.

19. Simplify:

$$i) (3/4)^2 \times (3/4)^3$$

$$ii) (-2/7)^2 \times (-2/7)^3$$

$$iii) (-7/8)^4 \div (-7/8)^2$$

$$iv) (1/3^2)^3$$

20. Simplify and express the result in power notation:

$$i) (7/-4)^4 \times (7/-4)^6$$

$$ii) (3/8)^{10} \div (3/8)^6$$

$$iii) (-5/2)^3 \div (-5/2)^7$$

$$iv) [(-3/4)^2]^3$$

$$v) (-5/7)^6 \div (-5/7)^3$$

$$vi) [(-3/4)^2]^3$$

$$vii) [(-5/7)^4]^5$$

21. Find the value of:

$$i) 3^{-4}$$

$$ii) (-4)^{-3}$$

$$iii) \left(\frac{2}{3}\right)^{-3}$$

$$iv) \left(\frac{-3}{7}\right)^{-2}$$

$$v) \left(\frac{5}{-6}\right)^{-3}$$

$$vi) (-3)^{-1}$$

22. Express the following as a rational number with positive exponent by using laws of exponents:

$$i) (3/4)^{-2} \times 3^{-2}$$

$$ii) (-7/8)^{-3}$$

$$iii) [(3^{-3})^4]$$

$$iv) 3^{-4}$$

$$v) (3)^{-4} \times (5)^{-4}$$

$$vi) 3^7 \times 3^{-4} \div 3^5$$

23. Express the following as a rational number with negative exponent by using laws of exponents:

$$i) (1/3)^4$$

$$ii) [(3^2)^3]$$

$$iii) -4^2 \times -4^3 \times -4^7$$

$$iv) (5/-6)^2 \times \left(-\frac{6}{5}\right)^3 \times 1/-6$$

$$v) [(-3/8^2)^3]$$

24. Find the value of :

$$i) 5^0$$

$$ii) 2^0 + 4^0 + 5^0$$

$$iii) \left(\frac{3}{4}\right)^{5+3+8}$$

$$\text{iv) } (-7)^{6 \times 3 - 8 - 10}$$

$$\text{v) } (2^\circ \times 4^\circ \div 5^\circ + 3^\circ) \div 7^\circ$$

25. By what number should we multiply 5^{-4} so that the product may be equal to 25 ?

26. By what number should 7^{-3} be divided so that the quotient may be equal to 7^{-2} ?

27. Find the value of x, such that $(3/5)^{-3} \times (3/5)^{-12} = (3/5)^{-5x}$.

28. Find the value of y, such that $(2/-3)^{-9} \times (-2/3)^{-3} = (-2/3)^{7y+2}$

29. Find the reciprocal of the rational number :

$$[(2/3)^{-3} \times (6/7)^2] \div [(3/7)^2 \times (3/4)^{-5}]$$

30. If $x = (2/3)^{-4} \div (4/6)^{-3} \times (3/4)^2$, find x^{-2}

31. If $y = (5/2)^2 \times (5/3)^4$, then find the value of y^3 .

32) Find the value of b if

$$\text{a) } 4^3 \times 4^{b-2} = 4^{-2}$$

$$\text{b) } 8^{-6} / 8^b = 8^4$$

$$\text{c) } (6/7)^b \times (6/7)^4 = (6/7)^4$$

$$\text{d) } (1/2)^{2b} / (1/2)^2 = (1/2)^4$$

33) Simplify

$$\text{i) } [(1/3)^{-1} + (1/6)^{-1}]^2 \times 4^2$$

$$\text{ii) } (5/-6)^4 / (5/-6)^8 = [(5/6)^2]^3$$

$$\text{iii) } (-7)^{2n} \times (-7)^3 = (-7)^9$$

$$\text{iv) } [(1/2)^{-3} - (1/3)^{-2}] \times (1/4)^{-3}$$

$$\text{v) } (6/7)^4 \times (6/7)^{-3} \times (1/2)^{-4} \times (3/5)^{-2}$$

$$\text{vi) } (5/2)^3 \times (5/2)^{-1} \times [(2/3)^2]^{-2} \times 1/16$$

34) Express in positive exponents

$$\text{a) } (1/2)^{-3} \quad \text{b) } (-3/7)^{-5} \quad \text{c) } (-3)^{-6} \quad \text{d) } (2)^{-3}$$

35) Simplify and express with positive exponents.

$$\text{a) } (4/5)^{-4} \times (6)^{-4}$$

b) $(3/5)^{-8} \times (10/9)^{-8}$

c) $(-3)^{-8} \times (-1/9)^{-8}$

d) $[(5/4)^{-2} \times (2/5)^{-3}]^{-1}$

36) a) By what no. should $(1/5)^2$ be multiplied so that the product becomes 15.

b) By what no. should $(7/11)^0$ be multiplied so that the product becomes $(13/15)^0$.

37) a) By what no. should $(3/7)^{-2}$ be divided so that the quotient becomes 7.

b) By what no. should $(-18)^{-1}$ be divided so that the quotient may be equal to $(-3)^{-1}$.

Exponents

I. Find x , if

1. $1^0 + 2^1 + 3^x = 4$

2. $x^2 = 2^2 + 4^2 + 5^2 + 6^2$

3. $x = a^{p-q} \times a^{q-r} \times a^{r-p}$

4. $3^4 \times 9^{x+2} = \left(\frac{1}{9}\right)^3$

5. $\left(\frac{3}{2}\right)^2 \times \left(\frac{2}{3}\right)^{5-2x} = \frac{2}{3}$

6. $\frac{1}{x} = \left[\left(-\frac{1}{2}\right)^2 \right]^3 \div 2^{-4}$

II By what number should $\left(-\frac{2}{7}\right)^3$ be divided so that the quotient be 49 ?

III Simplify : $\frac{x^a}{x^b}^{a+b} \quad \frac{x^b}{x^c}^{b+c} \quad \frac{x^c}{x^a}^{c+a}$

Rational Numbers

1. Using appropriate properties find:

$$(a) \left[-\frac{2}{3} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5} \right] =$$

$$(b) \frac{2}{5} \times \left[\frac{-3}{7} + \left(\frac{-1}{6} \right) \right] =$$

2. Write the additive inverse of each of the following :

$$(a) \frac{2}{8} \quad (b) \frac{-5}{9} \quad (c) \frac{-6}{-5} \quad (d) \frac{2}{-9} \quad (e) \frac{19}{-6}$$

3. Verify that $(-x) = x$ for

$$(a) x = \frac{11}{15} \quad (b) x = \frac{-13}{17}$$

4. Find the multiplicative inverse of the following :

$$(a) -13 \quad (b) \frac{-13}{19} \quad (c) \frac{1}{5} \quad (d) \frac{-5}{8} \times \frac{-3}{7} \quad (e) -1 \times \frac{-2}{5} \quad (f) -1$$

5. Name the property under multiplication used in each of the following :

$$(a) \frac{-4}{5} \times 1 = 1 \times \frac{-4}{5}$$

5. Name the property under multiplication used in each of the following:

$$(a) \frac{-4}{5} \times 1 = 1 \times \frac{-4}{5} = \frac{-4}{5} \quad (b) \frac{-13}{17} \times \frac{-2}{7} = \frac{-2}{7} \times \frac{-13}{17}$$

$$(c) \frac{-19}{29} \times \frac{29}{-19} = 1$$

6. Multiply $\frac{6}{13}$ by the reciprocal of $\frac{-7}{16}$

7. Tell what property allows you to compute $\frac{1}{3} \times \left[6 \times \frac{4}{3} \right]$ as $\left[\frac{1}{3} \times 6 \right] \times \frac{4}{3}$

8. Is $\frac{8}{9}$ the multiplicative inverse of $-1 \left[\frac{1}{8} \right]$? Why or why not?

9. Is 0.3 the multiplicative inverse of $3\frac{1}{3}$? Why or why not?

10. Write:

- (a) The rational number that does not have a reciprocal.
- (b) The rational numbers those which are equal to their reciprocals.
- (c) The rational number that is equal to its negative.

11. Fill in the blanks:

- (a) Zero has _____ reciprocal.
- (b) The numbers _____ and _____ are their own reciprocals.
- (c) The reciprocal of -5 is _____
- (d) Reciprocal of $1/x$, where $x \neq 0$ is _____
- (e) The product of two rational number is always a _____
- (f) The reciprocal of a positive rational number is _____

12. Represent these numbers on a number line:

(a) $\frac{7}{4}$ (b) $\frac{-5}{6}$

13. Represent $\frac{-2}{11}$, $\frac{-5}{11}$, $\frac{-9}{11}$ on the number line.

14. Write five rational numbers which are smaller than 2.

15. Find ten rational numbers between $\frac{-2}{5}$ and $\frac{1}{2}$

16. Find five rational numbers between:

(a) $\frac{2}{3}$ and $\frac{4}{5}$ (b) $\frac{-3}{2}$ and $\frac{5}{3}$ (c) $\frac{1}{4}$ and $\frac{1}{2}$

17. Write five rational numbers greater than -2

18. Find ten rational numbers between $\frac{3}{5}$ and $\frac{3}{4}$

19. Find $\frac{3}{7} + \left[\frac{-6}{11} \right] + \left[\frac{-8}{21} \right] + \frac{5}{22}$

20. Find $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left[\frac{-14}{9} \right]$

21. Write the additive inverse of the following:

(a) $\frac{-7}{19}$ (b) $\frac{21}{112}$

22. Verify that $-(-x)$ is the same as x for:

(a) $x = \frac{13}{7}$ (b) $x = \frac{-21}{31}$

23. Find $\frac{2}{5} - \frac{3}{7} - \frac{1}{14} - \frac{3}{7} \times \frac{3}{5}$

24. Write any three rational numbers between -2 and 0

25. Find any ten rational numbers between $\frac{-5}{6}$ and $\frac{5}{8}$

26. Find a rational number between $\frac{1}{4}$ and $\frac{1}{2}$

27. Find three rational numbers between $\frac{1}{4}$ and $\frac{1}{2}$

I. Fill in the blanks

1. _____ has no reciprocal.
2. There are _____ numbers of a rational numbers between any two numbers.
3. The product of a number and its multiplicative inverse is _____.
4. Sum of a number and its negative is _____.
5. _____ is the multiplicative identity.
6. _____ is the additive identity.
7. Additive inverse of 3 is _____7
8. Multiplicative inverse of -2 is _____.

Exponents And Powers

Q.1. Express the following in standard form:

- (i) Mass of Earth = 5,976,000,000,000,000,000,000 kg = _____
- (ii) The distance between sun and earth 149,600,000,000m = _____
- (iii) 0.00072984 = _____
- (iv) $4 \div 100000 =$ _____

Q.2. Express the following numbers in usual form:

- (i) $3.61492 \times 10^6 =$ _____
- (ii) $7.54 \times 10^{-4} =$ _____
- (iii) $3 \times 10^{-7} =$ _____

Q.3. For a non zero rational number 'a', $a^7 \div a^{12}$ is equal to _____.

Q.4. Find the value of x

(i) $2^{x-3} = 1$ (Ans: $x=3$) (ii) $(\frac{2}{9})^3 \times (\frac{2}{9})^{-6} = (\frac{2}{9})^{2x-1}$ (Ans: -1)

(iii) $3^x = \frac{1}{9}$ (Ans: $x=-2$) (iv) $2^{2x+2} = 4^{2x-1}$ (Ans: 2)

Q.5. Simplify:

(i) $\frac{2^{-3}x^{-2}y^4z^5}{2^{-3}x^2y^{-1}z^5}$

(ii) $\left\{ \left(\frac{1}{3} \right)^{-2} - \left(\frac{1}{2} \right)^{-3} \right\} \div \left(\frac{1}{4} \right)^{-2}$

(iii) $(6^{-1} - 8^{-1})^{-1} \div (2^{-1} - 3^{-1})^{-1}$

Q 1 Find the value of

a) 2^2

b) 2^{-2}

Q 2 Find the value of $(1/2)^{-1}$.

Q 3 Calculate the value of $2^3 \times 2^4$

Q 4 What is the exponential notation of $(2^3)^5$

Q 5 Simplify and express in positive exponential form.

$$(-3)^{-7} \times (-3)^{-8}$$

Q 6 Simplify the following exponents

$$(-2)^2 \times (-3)^2 \times (-5)^2$$

Q 7 Find the value of n in the given expression:

$$2^{2(n-1)} \times 2^{3n} = 2^{n+1}$$

Q 8 Find the value of p in the given expression

$$(-3)^{p-3} (-3)^{-3p+1} = (-3)^5$$

Q 9 Write the given expressions in expanded form.

a) 3456.234

b) 2016.123

Q 10 Express the following numbers in their standard form.

a) 0.00000000000468

b) 0.345

c) 372400000000000

d) 76100000000

Q 11 Express the following numbers in their usual form:

a) 3.05×10^{-6}

b) 4.5×10^4

c) 3.1563×10^6

ACTIVITIES:

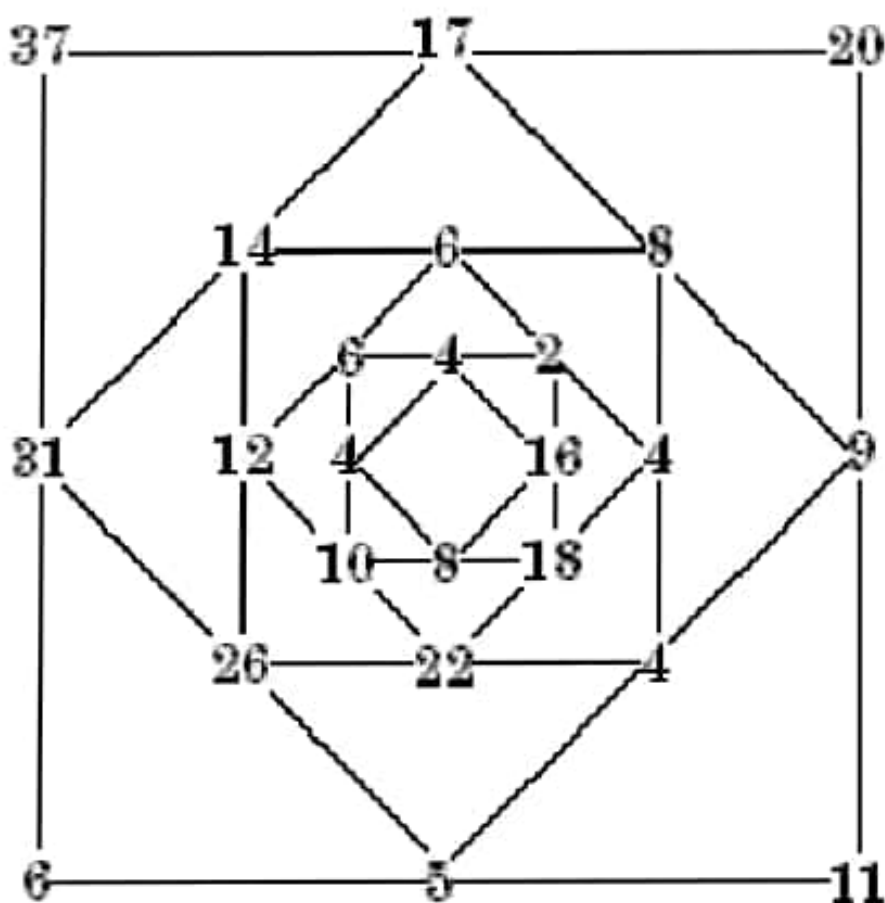
1. Learn table from 1 to 25
2. Learn square roots and square upto 30.
3. Learn cube roots and cube up to 30.
4. Write and learn the properties of chapter -1
5. Write and learn the laws of exponents from chapter -2

Do as directed:

- (a) Looking at the tables given below make the grids for square of 5, square of 7 and square of 8.

2^2	3^2	4^2																													
<table><tr><td>1</td><td>2</td></tr><tr><td>3</td><td>4</td></tr></table>	1	2	3	4	<table><tr><td>1</td><td>2</td><td>3</td></tr><tr><td>4</td><td>5</td><td>6</td></tr><tr><td>7</td><td>8</td><td>9</td></tr></table>	1	2	3	4	5	6	7	8	9	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>9</td><td>10</td><td>11</td><td>12</td></tr><tr><td>13</td><td>14</td><td>15</td><td>16</td></tr></table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2																														
3	4																														
1	2	3																													
4	5	6																													
7	8	9																													
1	2	3	4																												
5	6	7	8																												
9	10	11	12																												
13	14	15	16																												
$2 \times 2 = 4$	$3 \times 3 = 9$	$4 \times 4 = 16$																													

- (b) The middle number on each line is the difference between the two outside numbers.

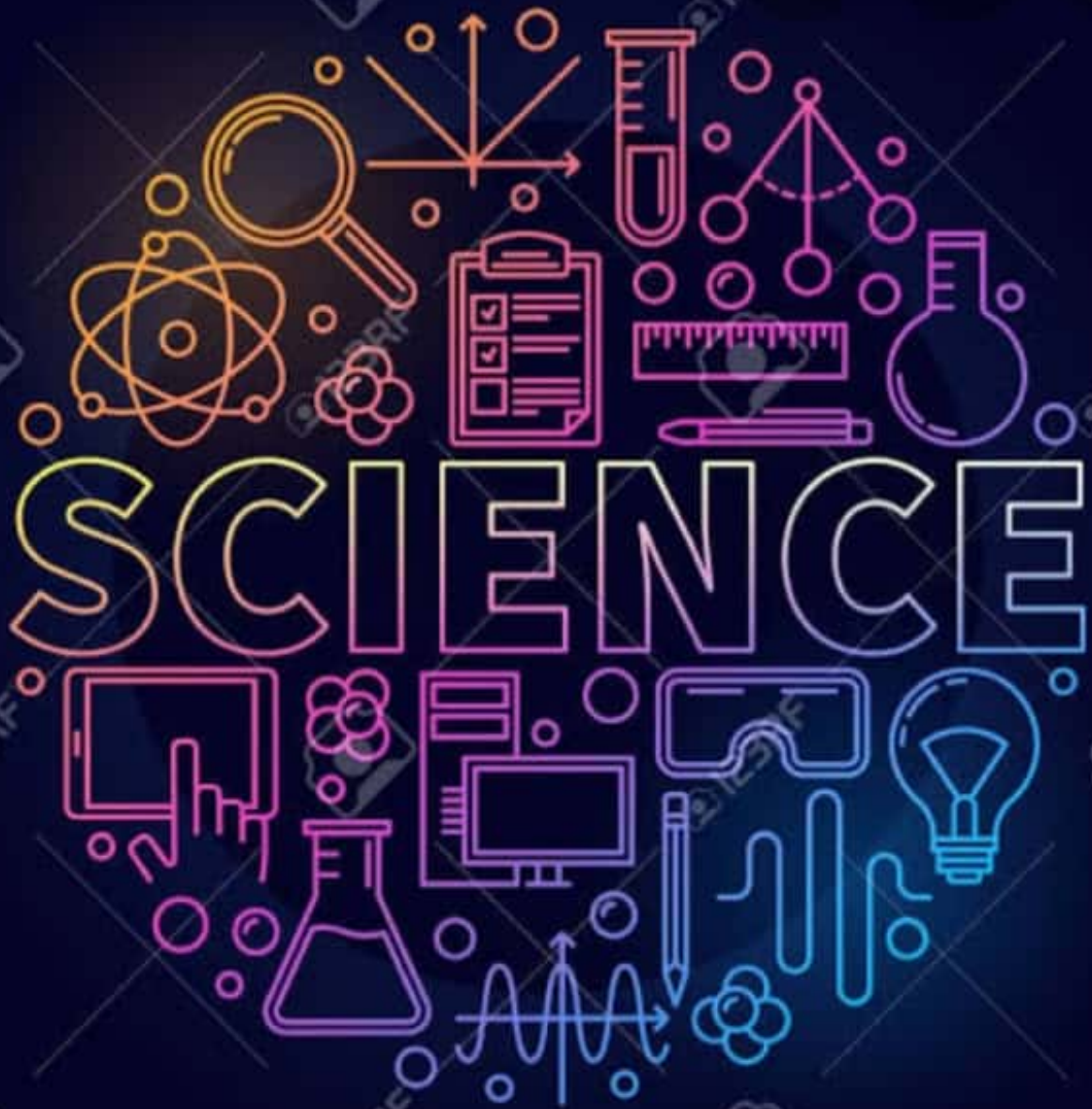


Prepare a grid which follows a definite shape and pattern of numbers.

- (c) A grid with magic number 15 is given in the figure where the sum of the rows, sum of the columns and sum diagonally is 15.

2	7	6	→15	
9	5	1	→15	
4	3	8	→15	
↙15	↓15	↓15	↓15	↘15

Prepare a grid with magic number 30. You can choose any set of numbers in sequence but the numbers should not be repeated.



HOLIDAY HOMEWORK FOR SUMMER VACATIONS

1. Make a model of PLANT CELL or ANIMAL CELL.
2. Write short notes on-
 - a. Biodiversity
 - b. Biofuel
 - c. Biofertiliser
3. Show on the map of India the following and learn-
 - a. 5 National Parks
 - b. 5 Biosphere Reserve
 - c. 5 Bird Sanctuaries
3. What is a Periscope? Make one periscope and explain its working of periscope .



Read,
learn, and
have fun
in the
summer
sun!



Class -VIII

Subject-Computer Science

Project work –

- ***Draw the models on different types of topologies in a sheet of paper and describe each of them that how it is connected to the computer networks in organisations.***
- ***Research identify and explain one “infamous” computer virus (big viruses are***

given names) which infected a great number of computers at some point in the past. Explain the damage it caused.

Holiday Homework

Computer virus.

1. What is "Trend Micro"?
 1. It is anti-virus software
 2. It is just a program
 3. It is virus program
 4. None of the above
2. What is the name of the viruses that fool a user into downloading and/or executing them by pretending to be useful applications?
 1. Cracker
 2. Worm
 3. Trojan horses
 4. Keylogger
3. The virus that spread in application software is called as
 1. Boot virus
 2. Macro virus
 3. File virus
 4. Anti virus
4. How does a Le-Hard virus come into existence?
 1. Hardware
 2. Software

-
3. FRIDAY 13
 4. Command.Com
 5. What is the virus that spread in computer?
 1. It is hardware
 2. It is system software
 3. It is a computer program
 4. It is a windows tool
 6. What kind of attempts is made by individuals to obtain confidential information from a person by falsifying their identity?
 1. Computer viruses
 2. Spyware scams
 3. Phishing scams
 4. None of the above.
 7. When does the time bomb occur?
 1. During a particular logic and data
 2. During a particular time
 3. During a particular data or time
 4. None of the above
 8. Delayed payload of some viruses is also called as
 1. Time
 2. Bomb
 3. Anti-virus
 4. None of the above
 9. What is the first boot sector virus?
 1. Brain
 2. Mind
 3. ELK cloner
 4. None of the above.
 10. What is the name of first computer virus?
 1. The Famous
 2. HARLIE
 3. PARAM
 4. Creeper
 11. What is anti-virus?
 1. It is a computer

-
2. It is a program code
 3. It is a company name
 4. It is an application
12. Which one of the following statement is true for Assembly language?
1. This language need not be translated into machine language.
 2. It is the easiest language to write programs
 3. It uses alphabetic codes.
 4. All of the above
13. Which language can be directly understood by the CPU?
1. Assembly language
 2. Java
 3. C
 4. All of the above
14. Which of the following is not a type of virus?
1. Boot sector
 2. Polymorphic
 3. Multipartite
 4. Trojans
15. A computer _____ is a malicious code which self-replicates by copying itself to other programs.
1. program
 - 2) virus
 - 3) application
 - 4) worm
16. In which year Apple II virus came into existence?
1. 1979
 2. 1980
 3. 1981
 4. 1982
17. _____ infects the master boot record and it is challenging and a complex task to remove this virus.
1. Boot Sector Virus
 2. Polymorphic
 3. Multipartite
 4. Trojans
18. _____ gets installed & stays hidden in your computer's memory. It stays involved to the specific type of files which it infects.

-
1. Boot Sector Virus
 2. Direct Action Virus
 3. Polymorphic Virus
 4. Multipartite Virus
19. _____ infects the executables as well as the boot sectors.
1. Non-resident virus
 - 2) Boot Sector Virus
 - 3) Polymorphic Virus
 - 4) Multipartite Virus
20. _____ deletes all the files that it infects.
1. Non-resident virus
 - 2) Overwrite Virus
 - 3) Polymorphic Virus
 - 4) Multipartite Virus
21. Which of the below-mentioned reasons do not satisfy the reason why people create a computer virus?
1. Research purpose
 2. Pranks
 - 3) Identity theft
 - 4) Protection
22. The virus hides itself from getting detected by ____ different ways.
1. 2
 2. 3
 3. 4
 4. 5
23. There are _____ types of computer virus.
1. 5
 2. 7
 3. 10
 4. 12
24. Which of them is not an ideal way of spreading the virus?
1. Infected website
 2. Emails
 3. Official Antivirus CDs
 4. USBs
25. _____ are difficult to identify as they keep on changing their type and signature.
1. Non-resident virus
 2. Boot Sector Virus
 3. Polymorphic Virus
 4. Multipartite Virus

Define the following terms:-

Term	Definition	
Network		
Server		
Client		
Workstation		
Modem		
Node		
Routers		
Gateway		
IP Address		
Domain Name System (DNS)		
Types of Networks		
Type	Definition	Example
Local Area Network (LAN)		
Wide Area Network (WAN)		
Virtual Private Network (VPN)		

Q1. Name the following:

(a) Work area in visual basic. _____

(b) Function key used to display output in VB

(c) Tool used to perform some action on the form by which the output is displayed:_____

Q2. Write any two uses of computer network.

Q3. Define :

a. Stand Alone Computer b. Network Topology c. A control in Visual Basic

Q4. Write one point of difference between : _____

(a) LAN and WAN

(b) Label Tool and Textbox tool

(c) Intranet and Extranet

True or False-

1. Each topology influences the capabilities of the hardware in order to manage the flow of information.
True False
2. Ring topology has no limit to install as many numbers of nodes when extending a network.
True False
3. Star topology has an average capacity in adding and removing nodes.
True False
4. Star topology has it own host.
True False
5. Ring topology does not have connection between each node.
True False
6. Bus topology has a central host and all nodes connect to it.
True False
7. In a ring topology, all computers and other devices are connected in a circle.
True False
8. Star topology limits installation of many numbers of nodes when extending a network.
True False
9. Bus network has no difficulties in troubleshooting.
True False
10. Bus topology can install many numbers of nodes when extending a network.
True False



Q1.Project work maximum 15 pages

Topic- Resource and its types

Q2.List down the wildlife sanctuary of india and mark them on map.

Q3.Read next chapters in all three subject and try to find exercise and question answer

English



Practice Exercise

A. Complete these conversations using **this**, **that**, **these** and **those**.

1. **Sujata:** What's the matter?

Reema: It's scissors. They are rather blunt. Can I borrow yours?

2. **Peter:** What are objects in the sky?

Mary: I don't know. They're too far away to see properly.

3. **Rita:** bench isn't very comfortable, is it?

Tina: No, I don't think I'll want to sit here very long.

4. **Parul:** It's so boring and gloomy here.

Depika: I know. Nothing ever happens in neighbourhood.

5. **Emma:** I've had mural on the dining room ceiling ever since I moved into the villa last year.

Laura: Oh, it's a beautiful design. I can see four cherubs in the sky, with angels and other celestial figures.

B. Complete this passage with possessives.

Last week, I visited _____ cousin in Ooty and was fascinated to see _____ beautiful wooden cottage nestled deep in the woods. Audrey says that it is a hand-hewn house decorated on a school teacher's budget. A lightweight fabric, hung as a curtain, ensured ample light into _____ drawing room. Antique perfume bottles that once belonged to _____ mother-in-law held cottage flowers like lilacs, roses and daisies. The floors were bare, with a single cotton rug in the kitchen. I was particularly fascinated with the coffee table: _____ legs were painted white, while the surface was made of cherry wood. This mismatched colour scheme reminded me of a phrase I had read somewhere: beauty in imperfection. I asked Audrey where she had bought it from, and she replied that it was a charity shop find. Audrey is also an embroidery enthusiast and floral designs are _____ cup of tea. I could see details such as pretty ribbons and buttons on her sweet pillows, and the fabrics were all in shades of soft yellows, lilacs, robin blues and faded pinks. Under the table, rested a wire basket that held _____ favourite books and magazines. With _____ two handles, Audrey remarked, it was very sturdy, and she often carried it with her when she went to gather mushrooms and berries from the woods.

I left _____ cozy home after a brief stay, and as I turned back to look at _____ simple dwelling one last time, a quotation from the French writer, Antoine de Saint-Exupery, came to my mind: 'Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away'.

C. Complete these sentences with either, neither, each or every. In some cases, more than one choice is possible.

1. Why are you in such a hurry time I see you?
2. There were huge bamboo trees on side of the road.
3. The pamphlets are meant for visitor.
4. It's a pity that dress fits Pammi.
5. side of a rhombus has the same length.
6. There is an autumn sale in shop in this shopping mall.
7. side of this coin has an emblem.
8. You may take half of the sandwich.
9. bus going in this direction will take you to the railway station.
10. team scored and the game was a draw.

D. Complete these sentences with **what**, **which**, **whose** or **how many** and **how much**. In some cases, more than one choice is possible.

1. _____ colour tiles have you used in your bathroom? _____ did they cost?
2. _____ cartons will we require to pack these books?
3. _____ curtains do you like the most—the amber, the aqua or the fern?
4. _____ dirty socks are lying on my chair? Is it yours, Roger?
5. _____ money should I save every month to be able to buy a house after five years?
6. _____ time do you need to finish this painting?
7. _____ employees are eligible for bonus?
8. _____ style did he use in his writing?
9. _____ cat is trotting through our yard? Does it belong to Miss Amis, our tenant?
10. _____ are you reading these days?

E. Complete the sentences with some, any, much, many, little, a little, the little, few, a few and the few.

1. Ravi is a fruit vendor. He has very _____ education, and he does not earn _____ money. However, with _____ money he earns, he is able to live comfortably and educate his two daughters.
2. I had to abandon my dream of living in my own house for lack of financial support. If I had received _____ help from my siblings, I could have bought a house. However, _____ help that I received from my _____ close friends wasn't enough and left me completely distraught.
3. The house that Emma inhabits is very small and does not have _____ modern facilities. She has only _____ friends who visit her occasionally, and _____ friends who visit her, often complain about her boring and uneventful life.
4. It's not good to eat too _____ cakes even though they are delicious. You'll have to practise _____ self-restraint.
5. Sarah had painted _____ pictures of the landscape, but she did not take _____ pride in them.
6. I don't think you will have _____ trouble with this vehicle during your journey.
7. They encountered _____ difficulties because only a few of them were really experienced at mountaineering. The rest had only _____ experience.

F. Rewrite the sentences correcting the errors in them. Focus on the use of determiners.

1. For a little days, he neither slept nor ate until he found a solution of the problem.

2. You should return this encyclopedia to it's owner immediately.

3. Have you any idea who invented refrigerator?

4. There isn't many water left in the tank, not even little drops.

5. There's a wonderful view from that office. Just come to the window.

6. We have received two proposals. Either proposal is acceptable.

7. I know each line of this beautiful poem by heart.

8. Generally, Ram doesn't have more money with him, but whenever he goes to visit his grandchildren in the village, he has the few coins in his pocket.

9. Sunita added a few vanilla essence to the mixture.

10. Every day in evening, I go for swim.

Article

1. You have seen many children working in glass and other hazardous factories. You are sad to see this. Write an article for your school magazine giving your views about Child Labour.
2. Parents today are facing a major problem with their children. They waste most of their time on Facebook and other social networking sites, with the result that their studies and other important activities are neglected. Write an article on the Pros and Cons of Social Networking Sites. You are Vinod Kumar.

Letter

1. You are Sunil Kumar, a resident of B-168 Vijay Vihar. Write a letter to the Accounts Manager of State Bank of India for opening a new savings account.
2. You are the Area Manager of your company. Write a letter to the Director of ICICI Bank- One of your valuable clients, for the payment of pending arrears towards your company.

Short Story

1. Develop a story on the following outlines:

A small boy—lives with mother—develops the habit of stealing—Mother does not check—develops the habit when grows—caught—punished

2. Develop a story on the given outlines :

The farmer had four sons—brothers kept quarrelling—farmer wanted to teach a lesson—gave them one stick each to break—easily broke—gave a pile of sticks—could not break—learnt a lesson.

Paragraph

1. Write a Paragraph in about 100-150 words on the topic
A day that I can't forget.
2. Write a Paragraph in about 100-150 words on the topic
The night before the examination.

Notice

1. You are the Cultural Secretary of your school. You have been asked to inform students of Classes VI to VIII about an Inter-School Dramatics Competition. Draft a notice in about 50 words to be put up on the school notice board, with all necessary details.
2. You are Anu Deshmukh/ Anoop Deshmukh, the Sports Secretary of Laxman Public School, Bhilai. Your school has decided to host the regional level volleyball tournament. Draft a notice for your school notice board inviting all the children of your school to cheer for the teams.

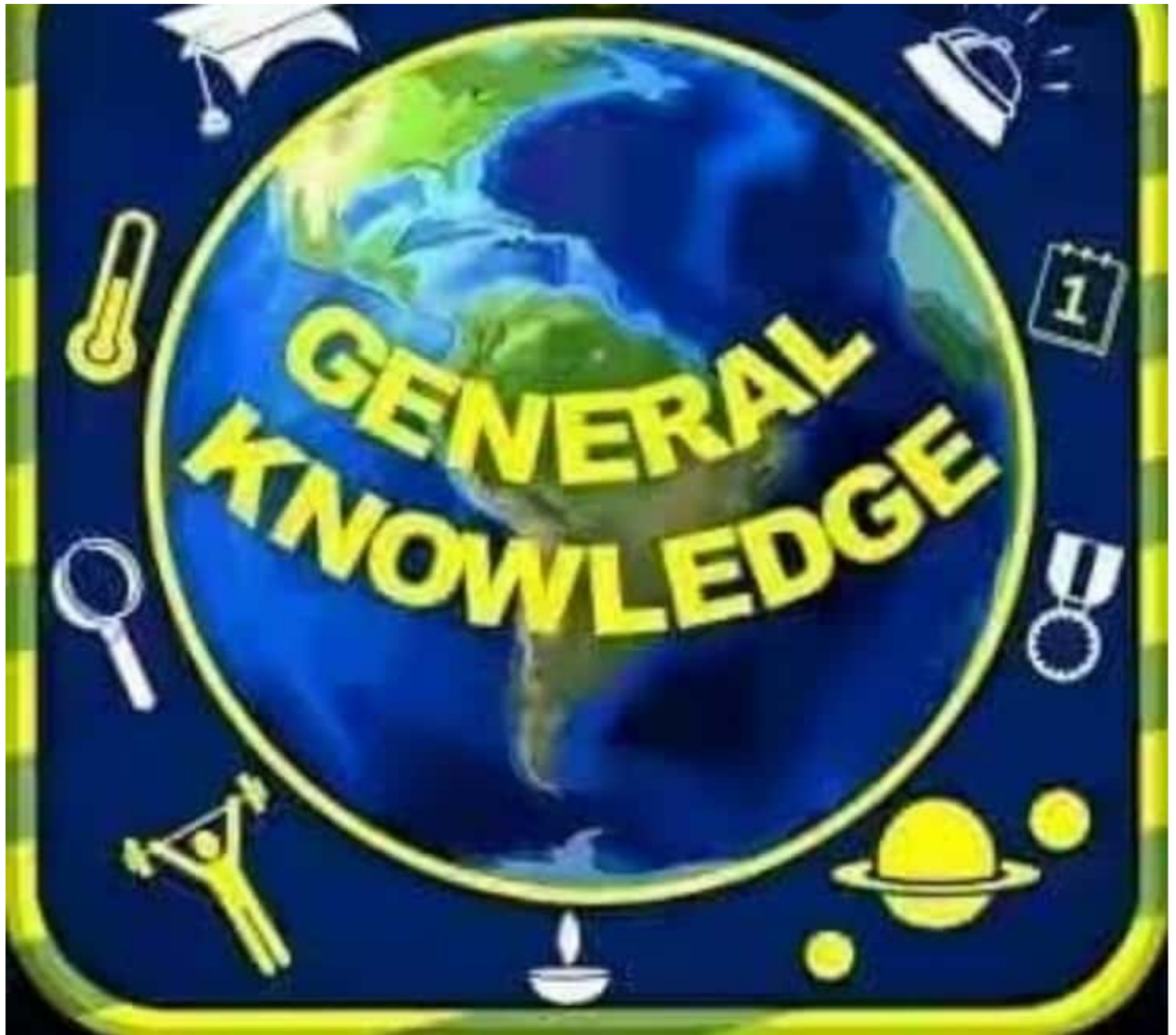


- 1) हिंदी साहित्य के किसी एक प्रसिद्ध लेखक के विषय में 10 वाक्य लिखिए।
- 2) आप की पाठ्यपुस्तक में प्रयोग किए गए किन्हीं 20 शब्दों के विलोम, 20 शब्दों के पर्यायवाची तथा 10 मुहावरों के अर्थ लिखकर वाक्य में प्रयोग कीजिए।
- 3) यदि आप अपने ग्राम के प्रधान होते तो इस महामारी के समय आप अपने गांव वालों की क्या मदद करते संक्षेप में लिखें।
- 4) आप भविष्य में क्या बनना चाहेंगे और क्यों? इसके विषय में 10 वाक्य लिखिए।
- 5) अपनी पाठ्य पुस्तक से कोई 20 कठिन शब्द चुनकर लिखिए तथा याद कीजिए।

संस्कृतम्

Subject—Sanskrit

- 1) कोई पांच श्लोक तथा उसके अर्थ लिखकर याद कीजिए।
- 2) हस्त, हरी, साधु तथा लता के शब्द रूप याद कर लिखें।
- 3) गम, अस् और हन् धातु रूप के पांचो लकार लिखकर याद करें।
- 4) संस्कृत में विसर्ग संधि पढ़ें तथा याद करें।



1. Write the names of various ministers of India along with their departments.
2. Write name of various countries, their capital and their currencies.
3. Write current affairs from 20th May to 30th June.



Reduce your risk of COVID-19



Clean your hands often

**Cough or sneeze in
your bent elbow –
not your hands!**



**Avoid touching your eyes,
nose and mouth**

**Limit social gatherings
and time spent in
crowded places**



**Avoid close contact with
someone who is sick**

**Clean and disinfect
frequently touched
objects and surfaces**



