Holiday homework: Class VI

1. The least whole number is
     (a) -1   (b) 0   (c) 1   (d) 2
2. The place value of 8 in 23890507 is
   (a) 80 lakhs   (b) 80 thousands   (c) 8 lakhs   (d) 8 crore.
3. The property depicted by a + b = b + a is
   (a) closure   (b) commutative   (c) distributive   (d) associative
4. The smallest prime number is
   (a) 0   (b) 1   (c) 2   (d) 4
5. If the sum of the digits of a number is divisible by 3 , then the number is divisible by
   (a) 2   (b) 3   (c) 4   (d) 5

Answer the following questions:

6. Place commas correctly and write the numerals:
   Seventy three lakh seventy five thousand three hundred seven..
7. How many whole numbers are there between 32 and 53?
8. Write first five multiples of 6. .
9. Write all the prime numbers less than 15.
10. Find the product by suitable rearrangement:
$$8 \times 291 \times 125$$
11. Insert commas suitably and write the names according to Indian System of Numeration :
   (a) 85957002   (b) 5460028.
12. Find the value of the following:
$$81265 \times 169 - 81265 \times 69$$
13. Express each of the following numbers as the sum of three odd primes:
   (a) 21   (b) 31 .
14. Using divisibility test check whether the number 235782 is divisible by 9.
15. Write all the factors of 72.
16. The town newspaper is published every day. One copy has 12 pages. Everyday 11,980 copies are printed. How many total pages are printed everyday?
17. The school canteen charges Rs 30 for lunch and Rs 6 for milk for each day. How much money do you spend in 10 days on these things?
19. Using divisibility tests, determine which of following numbers are divisible by 6:
   (a) 61233   (b) 902352

Holiday homework: Class VII

1. Use the sign of $>$, $<$ or $=$ in the box to make the statements true.
(a) $(-8) + (-4)$ ☐ $(-8) - (-4)$ (b) $(-3) + 7 - (19)$ ☐ $15 - 8 + (-9)$
2. Find :   (a) $15 \times (-16)$ (b) $21 \times (-32)$.
3. Find the product, using suitable properties: $26 \times (-48) + (-48) \times (-36)$.
4. Arrange the following in descending order: 2/9, 2/3, 3/8
5. A plane is flying at the height of 5000 m above the sea level. At a particular point, it is exactly above a submarine floating 1200 m below the sea level. What is the vertical distance between them?
6. There are 10 marbles in a box with numbered from 1 to 10 marked on each. What is the probability of drawing a marble on each of them
(a) with number 4 and (b) with number 8?
7. Add: $3 - 12 + 9$
8. Find: $15 \times (-16)$
9. In a quiz, team A scored $-40, 10, 0$ and team B scored $10, 0, -40$ in three successive rounds. Which team scored more?.
10. A student has got the marks as

	Eng	Hindi	Maths	Sc
HY-I	85	79	88	75
SEE-II	90	88	85	90

Draw a double bar graph of the above information.

11. In a class test containing 15 questions, 4 marks are given for every correct answer and (–2) marks are given for every incorrect answer.

(i) Gurpreet attempts all questions but only 9 of her answers are correct. What is her total score?

(ii) One of her friends gets only 5 answers correct. What will be her score?

12. A cement company earns a profit of Rs 8 per bag of white cement sold and a loss of Rs 5 per bag of grey cement sold.

(a) The company sells 3,000 bags of white cement and 5,000 bags of grey cement in a month. What is its profit or loss?

(b) What is the number of white cement bags it must sell to have neither profit nor loss, if the number of grey bags sold is 6,400 bags.

13. In a class test 20 students obtained following marks :

10   5   8   11   5   6   13   15   9   8   12   12   14   9   9   9   11   13   13   14

Organize the data in a tabular form.

(a) Find the range of the data.

(b) Find the arithmetic mean.

Holiday homework: Class VIII

1. The multiplicative inverse of – ½ is

  (a) 2   (b) -2   (c) - 1   (d) 1

2. $\dfrac{3}{4} - \dfrac{2}{5}$

  (a) $\dfrac{7}{2}$ (b) $-\dfrac{7}{2}$ (c) $\dfrac{1}{2}$ (d) $\dfrac{1}{9}$

3. The solution of the equation $(x + 2) = 10$ is

  (a) 5   (b) 8   (c) -8   (d) -5

4. Write four rational numbers between $\dfrac{2}{3}$ and $\dfrac{3}{4}$

5. Solve : $3(4 - x) = 15$

6. Verify that $- (- x)$ is the same as x for $x = \dfrac{3}{7}$.

7. The difference between two whole numbers is 66. The ratio of the two numbers is 2 : 5. What are the two numbers?

8. The present age of Sahil's mother is three times the present age of Sahil. After 5 years their ages will add to 66 years. Find their present ages.

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

10. Solve the following equations:

       (a) $2x + 1 = x + 6$

       (b) $3(2y - 3) = 5(y + 3)$

       (c) $8x + 4 = 2(x - 1) + 7$

11. Sum of the digits of a two-digit number is 9. When we interchange the digits, it is found that the resulting new number is greater than the original number by 27. What is the two-digit number?

12. The sum of three consecutive multiples of 11 is 363. Find these multiples.

Holiday homework: Class IX

1. Is zero a rational number? Can you write in the form p/q, where p and q are integer and?
2. Find five rational numbers between 3/5 and 4/5?
3. Visualize 3.765 on the number line using successive magnification.
4. Simplify the followings:

i. $(5+\sqrt{7})(2+\sqrt{5})$

ii. $(5+\sqrt{5})(5-\sqrt{5})$

iii. $(\sqrt{3}+\sqrt{7})^2$

iv. $(\sqrt{11}-\sqrt{7})(\sqrt{11}+\sqrt{7})$

Polynomials:

1. Find the zero of the polynomial in each of the following cases:
   (i) $p(x) = x - 5$ (ii) $p(x) = x^2 - 25$ (iii) $p(x) = 2x + 5$
2. Find the remainder when $x^3 + 3x^2 + 3x + 1$ is divided by
   (i) $x - 1$ (ii) $x + 2$
3. Find the value of k, if $x - 1$ is a factor of $p(x)$ in each of the following cases:
   (i) $p(x) = x^2 + x + k$ (ii) $p(x) = 2x^2 + kx + \sqrt{2}$
4. Evaluate the following products without multiplying directly:
   (i) 103×107 (ii) 95×96 (iii) 104×96
5. Factorise the following using appropriate identities:
   (i) $9x^2 + 6xy + y^2$ (ii) $4y^2 - 4y + 1$

Coordinate Geometry:

1. Q.1 On which axes do the given points lie?
i. (7, 0)
ii. (0, -3)
iii. (0, 6)
iv. (-5, 0)
2. Find the area of triangle OAB with O(0,0), A(4,0) & B(0,6) .
3. Draw the lines X'OX and YOY as the axes on the plane of a paper and plot the given points.
i. A (5,3)
ii. B (-3, 2)
iii. C(-5, -4)
iv. D(2,-6)
4. Draw a triangle with vertices O(0,0) A(3,0) B(3,4). Classify the triangle and also find its area.
5. Draw a quadrilateral with vertices A(2,2) , B(2,-2), C(-2,-2), D(-2,2). Classify the quadrilateral and also find its area.

Homework for summer Vacation: Class X
Real Numbers
1. State the fundamental theorem of Arithmetic.
2. Express 2658 as a product of its prime factors.
3. Show that the square of an odd positive integers is of the form 8m + 1 for some whole number m. 4. Find the LCM and HCF of 17, 23 and 29.
5. Prove that $\sqrt{3}$ not a rational number.
6. Find the largest positive integer that will divide 122, 150 and 115 leaving remainder 5, 7 and 11 respectively.
7. Using prime factorization method, find the HCF and LCM of 72, 126 and 168. Also show that product of the three numbers.
Polynomials:

1. Check whether $g(x) = 3x - 2$ is a factor of $p(x) = 3x^3 + x^2 - 20x + 12$.
2. Find quotient and remainder applying the division algorithm on dividing
   $p(x) = x^3 - 6x^2 + 2x - 4$ by $g(x) = x - 1$.
3. Find zeros of the polynomial $2x^2 - 8x + 6$.
4. Find the quadratic polynomial whose sum and product of its zeros are $\frac{2}{3}$, $\frac{-1}{3}$
   respectively.
5. Find the zeroes of polynomial $x^3 - 2x^2 - x + 2$.
6. If one of the zeroes of the polynomial $2x^2 + px + 4 = 0$ is 2, find the other root, also
   find the value of p.
7. If α and β are the zeroes of the polynomial $kx^2 + 4x + 4$ show that $\alpha^2 + \beta^2 = 24$, find
   the value of k.

Quadratic equations:

1. Find the value of p so that the equation $3x^2-5x+2p=0$ has equal roots. Also find the roots.
2. The sum of two numbers is 15. If the sum of their reciprocals is $\frac{3}{10}$ find the two numbers.
3. Find a and b such that x+1 and x+2 are factors of the polynomials $x^3+ax^2-bx+10$.
4. Find the quadratic equation whose roots are $2 + \sqrt{3}$ and $2 - \sqrt{3}$
5. A person on tour has Rs. 360 for his daily expenses. If he exceeds his tour program me by
   four days, he must cut down his daily expenses by Rs 3 per day. Find the number of days
   of his tour program me.
6. Divide 29 into two parts so that the sum of squares of the parts is 425.
7. Solve for x: $9x^2-6ax+(a^2-b^2)=0$
8. If the equation $(1+m^2)x^2 +2mcx+c^2-a^2=0$ has equal roots, show that $c^2=a^2(1+m^2)$