HOLIDAY HOMEWORK - CLASS VIII

MATH

Assignment –I (Unit: Squares and Square Roots)

1. Which of the following numbers are perfect squares? Justify your answer **by prime factorisation method**.

(a) 1764   (b) 54756

2. Write a Pythagorean triplet whose one of the members is :

 (a) 6   (b) 18   (c) 20   (d) 13   (e) 12

3. Find the square root of $2^6 \times 3^4 \times 5^8$.

4. Evaluate:

(a) $\sqrt{\dfrac{361}{625}}$ (b) $\sqrt{0.0256}$ (c) $\sqrt{7744}$

5. Find the square root of the following by **division method**:

(a) 2304   (b) 40401   (c) 182.25   (d) 0.00015129

   (e) $75\dfrac{46}{49}$

6. For each of the following numbers, find the smallest whole number by which it should be multiplied so as to get a perfect square number. Also find the square root of the square number so obtained.

(a) 1100   (b) 735

7. Find the least number which must be added to the following numbers to make each a perfect square:

(a) 4931   (b) 2546031

8. Find the least number which must be subtracted from 2361 to make it a perfect square.

9. If $\dfrac{x}{\sqrt{2.25}} = 2$, then find the value of x.

10. If $\sqrt{18225} = 135$, then find the value of $\sqrt{18225} + \sqrt{182.25} + \sqrt{1.8225} + \sqrt{0.018225}$

11. Find the square root of the following correct to two places of decimal.

(a) 2563   (b) 1972

12. Find the length of the side of a square whose area is 441 cm^2

Assignment –II (Unit:Algebraic Expressions)

1. Classify the following polynomials as monomials, binomials, trinomials. Which polynomials do not fit in any of these three categories?

(a)$x^2 + y^2$ (b) 1000-x   (c) $x + x^2 + x^3 + x^4 + x^5$ (d) 8 - y +-5x   (e) $2y$ – $3y^2$

(f)$2y - 3y + 4y^3$ (g)$5x - 8y + 3xy$ (h)$ab + bc + cd + da + 2ab$ (i)$pqr+2pq+5pqr$

2. The sum of area of the squares of side 2a and 2b will be: (Show the steps also)

a) 2a+ 2b

b) $4a^2 + 4b^2$

c) ab

d) None of these

side =2a   Side= 2b
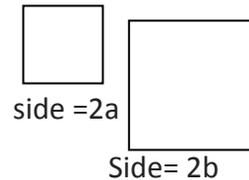
3. (a) Subtract $8a - 7ab + 3b - 20$ from $20a - 9ab + 5b - 20$

   (b) Subtract $4p^2q - 4pq - 5pq^2 - 8p + 7q - 18$ from $18 - 3p - 11q + 5pq - 2pq^2 + 5 p^2q$

4. Add the following.

(i)   ab – bc+ ac,   bc – ca+ ab,   ca – ab-2bc

(ii) $2p^2q^2 - 3pq + 4$, $5 + 7pq - 3p^2q^2$, $4p^2q^2 + 10pq$

(iii) $a^2 + b^2$, $b^2 + c^2$, $c^2 + a^2$, 2ab + 2bc + 2ac

5. a) If x -1/x =4, find the value of $x^2 + 1/x^2$

   b) If p +q =13 and pq =22, then $p^2 + q^2$

6. Find the value of x if 8x=35^2 -27^2

7. Use a suitable identity to find each of the following products.

a) (p - 11) (p + 11)   b) (2y + 5) (2y – 5)   c) $(a^2+ b^2) (a^2 - b^2)$

 d) (3a + 9b) (3a – 9b)   e) $2(a – 9)^2$ f) $(6x+ 5y)^2$

8. Simplify :

(a) 3t + 3(3 − 2t) + 6   (b) $x^2(x-3y^2)-xy(y^2-2xy)-x(y^3-5x^2)$ (c) 8(9y − 2) -

6(2 − 5y)

9. Divide by long division method and check whether divisor is the factor of the dividend or not.

(a) $6x^3 - x - 19x^2 - 29$ by $2x+3$.

(b) $2x^2 - 11x + 12$ by $x-4$

10. Find the product : $(x-5)(x+5)(x^2+25)$

Assignment – III (Unit: Parallelograms)

1. Adjacent angles of a parallelogram are in ratio7:2. Find all the angles .

2. If an angle of a parallelogram is four-fifth of its adjacent angle, find the angles of the parallelogram.

3 .Can a quadrilateral be a parallelogram if: (i) $\angle S + \angle R = 180°$ (ii) $\angle P = 80° and \angle R = 85°$

4. Two adjacent angles of a parallelogram are (3x - 4)° and (3x + 16)°. Find the value of x and hence find the measure of each of its angles.

5. The sum of two opposite angles of a parallelogram is 130°. Find the measure of each of its angles.

6. The ratio of two sides of a parallelogram is 4 : 3. If its perimeter is 56 cm, find the lengths of its sides.

7. In the adjoining figure, ABCD is a parallelogram in which ∠BAD = 75° and ∠DBC = 60°. Calculate: (i) ∠CDB and (ii) ∠ADB.
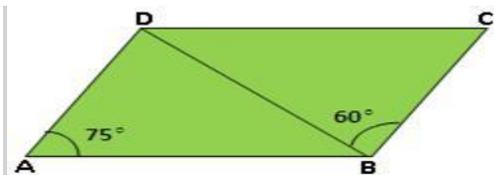
8. In the figure, ABCD is a parallelogram in which ∠CAD = 40°, ∠BAC = 35° and ∠COD = 65°.

   Calculate: (i) ∠ABD (ii) ∠BDC (iii) ∠ACB (iv) ∠CBD.
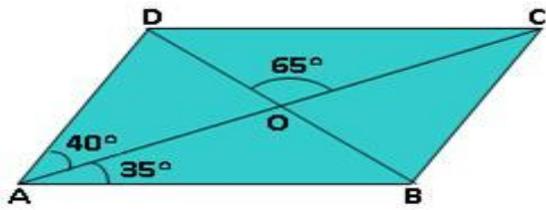
9. Two opposite angles of a parallelogram are (3x-2) and (50-x). Find the measure of each angle of a parallelogram.

10. The length of a rectangle is 8 cm and each of its diagonals measures 10 cm. Find its breadth.
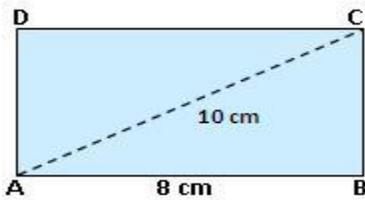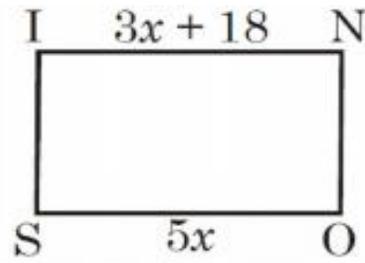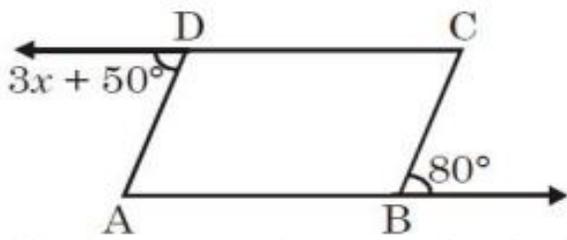

11. In the adjacent figure, ABCD is a rhombus whose diagonals AC and BD intersect at a point O. If side AB = 10cm and diagonal BD = 16 cm, find the length of diagonal AC.
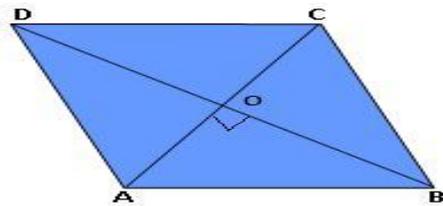
12.In the adjoining figure, ABCD is a parallelogram in which ∠A = 75°. Find the measure of each of the angles ∠B, ∠C and ∠D.
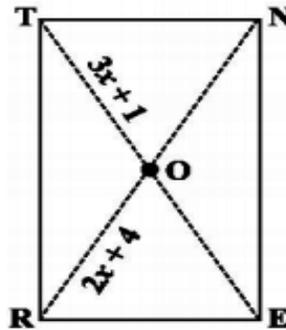

13. In the given figures below, ABCD and SONI are parallelograms. Find x for both the figures.
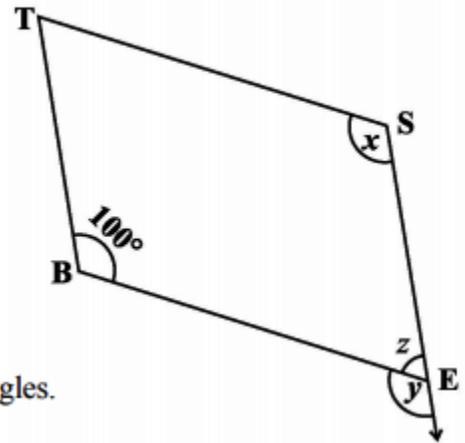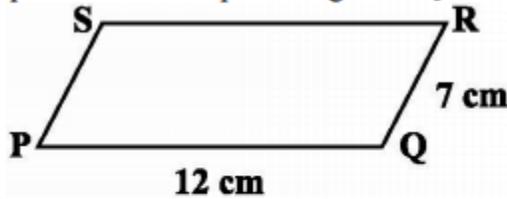
14. Find the value of unknowns.

RENT is a rectangle. Its diagonals meet at O. Find x, if OR $= 2x + 4$ and OT $= 3x + 1$.

15. Find the perimeter of the parallelogram PQRS

16. In Fig, BEST is a parallelogram. Find the values x, y and z.

17. In a parallelogram RING, if $m\angle R = 70°$, find all the other angles.

Assignment –IV (Unit: linear equations in one variable)

Q.1 Solve:

1. $6(3x + 2) + 5(7x - 6) - 12x = 5(6x - 1) + 6(x - 3)$

2. $\dfrac{3x + 4}{5} = \dfrac{2x - 3}{3}$

3. $0.8 - 0.28x = 1.16 - 0.6x$

4. $9 - 2(x - 5) = x + 10$

5. $5(y - 1) = 3(2y - 5) - (1 - 3y)$

6. $\dfrac{8x - 5}{(7x + 1)} = -\dfrac{4}{5}$

7. $\dfrac{(m + 2)(2m - 3) - 2m^2 + 6}{(m - 5)} = 2$

8. $\dfrac{m}{4} - \dfrac{m - 1}{2} = \dfrac{1}{8} - \dfrac{m - 2}{3}$

9. $\dfrac{x + 3}{2} - \dfrac{3x + 1}{4} = \dfrac{2(x - 2)}{3} - 2$

10. $\dfrac{(x + 2)(2x - 3) - 2x^2 + 6}{x - 5} = 2$

Q2) Solve the word problems:

1.   The sum of two consecutive even numbers is 38. Find the numbers.

2. The sum of three consecutive odd numbers is 51. Find the numbers.

3. A 300 m long wire is used to fence a rectangular plot whose length is twice its width. Find the length and breadth of the plot.

4**.** The denominator of a fraction is greater than the numerator by 8. If the numerator is increased by 17 and denominator is decreased by 1, the number obtained is 3/2, find the fraction.

5. Among the two supplementary angles, the measure of the larger angle is 36° more than the measure of smaller. Find their measures.

6. In an isosceles triangle, the base angles are equal and the vertex angle is 80°. Find the measure of the base angles.

7. Adman's father is 49 years old. He is 5 years older than four times Adman's age. What is Adman's age?

8. Divide 36 into two parts in such a way that 1/5 of one part is equal to 1/7 of the other.

9. A motorboat goes downstream in river and covers a distance between two coastal towns in 5 hours. It covers this distance upstream in 6 hours. If the speed of the stream is 3 km/hr, find the speed of the boat in still water.

10. Each side of a triangle is increased by 10 cm. If the ratio of the perimeters of the new triangle and the given triangle is 5:4, find the perimeter of the given triangle.