Maths Worksheet 10th Lily

Worksheet-1 (Real numbers)

1. $n^2 - 1$ is divisible by 8, If n is

(a) An integer (b) A natural no. (c) An odd no. (d) An even no.

2. If the HCF of 65 and 117 is expressible in the form 65m - 117, then the value of m is

(a) 4 (b) 2 (c) 1 (d) 3

3. After how many decimal places will the decimal expansion of the number $\frac{47}{2^3 5^2}$ terminate?

(a) 5 (b) 2 (c) 3 (d) 1

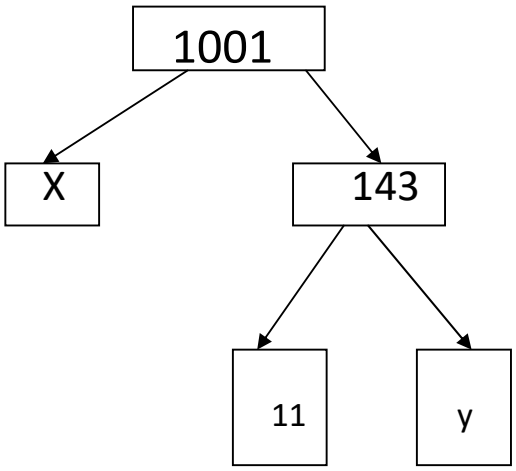
4. The largest number which divides 70 and 125, leaving remainders 5 and 8 respectively is:-

(a) 13 (b) 65 (c) 875 (d) 1750

5. For some integer m, every even integer is of the form

(a) m b) m+1 (c) 2m (d) 2m+1

6. The values of x and y in the given figure are:-



7. If $1080 = 2^p \times 3^q \times 5$, then (P - q) is equal to:-

8. If HCF (336, 54) = 6, find LCM (336, 54).

9. What is the greatest possible speed at which a girl can walk 95 m and 171m in an exact number of minutes.

10. Prove that √7, 3 +√5 is an irrational no.

Worksheet-2 (Polynomials)

1. Write a quadratic polynomial, if sum of whose zeroes is 2 and product is -7.

2. If one of the zeroes of quadratic polynomial $(K-1)x^2 + kx + 1$ is -3, then the value of K is ___?

3. If sum of zeroes of the quadratic polynomial $x^2 - k x + 6$ is 3, find value of K.

4. Find the value of K for which the zeroes of the polynomial $3x^2 - 10x + k$ are reciprocal of each other.

5. If α and β are the zeroes of $ax^2 - bx + c$ ($a \neq 0$), then Calculate α+β.

6. Find a quadratic polynomial whose Zeroes are 3 - 2√5 and 3 + 2√5.

7. Find the value of K such that the polynomial $x^2 - (K+6)x + 2(2K-1)$ has the sum of its zeroes equal to half of their product.

8. Find the zeroes of Polynomial by factorisation method and verify the relationship between the zeroes and the coefficients of the polynomial:-

$$7y^2 - \frac{11}{3}y - \frac{2}{3}$$

9. Find the zeroes of the polynomial

$6x^2 - 3 - 7x$

10. Find the zeroes of polynomial $x^2 + \frac{1}{6}x - 2$ and verify the relationship between the coefficients and the zeroes of polynomial.

Worksheet-3 (Pair of linear Equation's)

1. (a) If $\frac{a_1}{b_1} \neq \frac{a_2}{b_2}$ so pair of linear Eq^n is _____.

(b) If $\frac{a_1}{b_1} = \frac{a_2}{b_2} \neq \frac{c_1}{c_2}$ so pair of linear Eq^n is _____

(c) If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ so pair of linear Eq^n ____.

2. The pair of equations x + 2y + 5 = 0 and -3x - 6y + 1 = 0 have:-

   (a) Unique solution

   (b) Exactly two solutions

   (c) infinitely many solutions

   (d) No solution.

3. For what value of k, do the equations 3x - y + 8 = 0 and 6x - ky = -16 represent Coincident line.

4. Solve the following pair of linear equation.

   21x + 47y = 110

   47x + 21y = 162

5. The age of the father is twice the sum of the ages of his two children. After 20 years, his age will be equal to the sum of the ages of his children. Find the age of the father.

6. The cost of 4 pens and 4 pencil boxes is Rs. 100. Three times the cost of a pen is ₹ 15 more than cost of a pencil box. From the pair of linear equations for the above situation. Find the cost of pen and a pencil box.

7. Two numbers are in the ratio 5:6. If 8 is subtracted from each of the numbers, the ratio becomes 4:5. Find the numbers.

8. A pair of linear equations $a_1x + b_1y + c_1 = 0$; $a_2x + b_2y + c_2 = 0$ is said to be inconsistent, if :

   (a) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$

   (b) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} = \frac{c_1}{c_2}$

   (c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

   (d) $\frac{a_1}{a_2} \neq \frac{c_1}{c_2}$

Worksheet-4 (Quadratic Equation)

1. Write General form of Quadratic Equation.

2. Write expression of discriminant and If roots are real so quadratic equation is :- _____

3. The quadratic equation $2x^2 - \sqrt{5}x + 1 = 0$ has

   (a) two distinct real root (b) two equal real roots

   (c) no real root (d) more than 2 real root.

4. Show that it is Quadratic Equation or not:-

   $2(x-1)^2 = 4x^2 - 2x + 1$

5. Find roots of Quadratic Equation by factorisation method:-

   $2x^2 + \frac{5}{3}x - 2 = 0$

6. A train travelling at a uniform speed for 360 Km, would have taken 48 minutes less to travel the same distance if its speed were 5 km/h more. Find the original speed of train.

7. Find the equation have real roots. If real roots exist, find them.

   $5x^2 - 2x - 10 = 0$

8. Ajita scored 10 more marks in her mathematics test out of 30 marks, 9 times these marks would have been the square of her actual marks. How many marks did she get in the test?

Worksheet-5 (Arithmetic progressions)

1. In an A.P if d = -4, n = 7, $a_n = 4$ then a is:-

   (a) 6 (b) 7 (c) 20 (d) 28

2. The 11^{th} term of the A.P. $-5, \frac{-5}{2}, 0, \frac{5}{2}$ is

   (a) -20 (b) 20 (c) -30 (d) 30

3. The 21^{th} term of an A.P whose first two terms are -3 and 4 is:-

4. If the first term of an A.P is -5 and the Common difference is 2, then the sum of first 6 terms is.

5. The sum of first 16 terms of the A.P: 10, 6, 2 ……. is.

6. The sum of first five multiple of 3 is:-

7. Reena deposited Rs 1000 at a Compound interest at the rate of 10% per annum. The amount at the end of first year, second year, third year ..... form an A.P. Justify your answer.

8. If the 2^{nd} term of an A.P is 13 and 5^{th} term is 25, what is its 7^{th} term?