



INDIAN SCHOOL DARSAIT

DEPARTMENT OF MATHEMATICS



Subject : MATHEMATICS Topic : QUADRATIC EQUATIONS Date of Worksheet :14/05/2018
Worksheet No: 4

Resource Person: Mrs. Anu likson

Name of the Student _____ Class & Division: X..... Roll Number : ____

S.No.	Section A-[Basic skills]	
1.	Solve : $(x+4)7 = -2(x+1)$	
2.	Solve : $x + 2x^2 + 4x + 8 - x^2 + 20 - 4$	
3.	$\sqrt{625} + \sqrt{576}$	
4.	$7x = -49$	
5.	$(x - 4) = 3 + (x + 1)$	
Sl.NO.	Section B -[Chapter based questions]	Marks
1.	Find the value of p to have real roots in each of the following a) $5px^2 - 8x + 2$ b) $4x^2 + 8x - p = 0$	2
2.	Find the value of p for which the roots of the following equations are real and unequal a) $9x^2 - 24x + p = 0$ b) $x^2 - 2(p+1)x + p^2 = 0$	2
3.	Solve for x : $4\sqrt{3}x^2 + 5x - 2\sqrt{3} = 0$	4
4.	If one root of the equation $x^2 - 5x + k = 0$ is equal to 4 , find the value of k and the other root	4
5.	The sum of two numbers is 15. If the sum of their reciprocals is $\frac{3}{10}$, find the numbers.	3
6.	Divide 29 into two parts so that the sum of the squares of the parts is 425.	3
7.	A train travels a distance of 480 km at a uniform speed. If the speed had been 8km/h less, then it would have taken 3 hours more to cover the same distance. We need to find the speed of the train.	
8.	A two digit number is such that the product of its digit is 15. If 18 is added to the number, the digits interchange their places. Find the number.	4
9.	A speed of a boat in still water is 11km/h. It can go 12km upstream and return downstream to the original point in 2hours 45minutes. Find the speed of the stream.	4
10.	In a class test , the sum of Rohan's marks in Maths and English is 30.Had she got 2 marks more in Mathematics and 3 marks less in English , the product of his marks would have been 210. Find his marks in the two subjects.	4

11.	Solve for x : $9x^2 - 6ax + (a^2 - b^2) = 0$	4
12.	Solve for x : $\frac{x-1}{x-2} + \frac{x-3}{x-4} = 3\frac{1}{3}$ ($x \neq 2,4$)	4
SECTION C - [HOT QUESTIONS]		
1.	Solve for x : $a^2b^2x^2 + b^2x - a^2x - 1 = 0$	4
2.	Solve for x : $x^2 - 2(a^2 + b^2)x + (a^2 - b^2)^2 = 0$	4
3.	Find the roots of the equation $5x^2 - 6x - 2 = 0$ by the method of completing the square.	4
4.	If the roots of the equation $(a - b)x^2 + (b - c)x + (c - a) = 0$ are equal , prove that $2a = b + c$.	3
5.	Find the value of x: $\sqrt{x^2 - 4} - x - 2 = \sqrt{x^2 - 5x + 6}$	4