DSA 5970 - INTRODUCTION TO R

Practice Questions

Units – 1, 2

Calculate the values of the given expressions using the given values and R as a calculator

$a = 3;\ b = 5;\ p = -4;\ x = 2;\ y = 7$

1. $9ab(a-8) - 15a$
2. $a^3 + 4b^2 - b^3$
3. $p^4 - 7p^3 - 2p - 11$
4. $3(x+5) - 8(x+5)$
5. $2xy + 6x^2 + (x-y)^4$

Calculate the roots of the equations using the root of the equation, $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

Hint: Use vector (-1, 1) to calculate both the roots by using the formula.

6. $x^2 - x - 2$
7. $5x^2 - 2x + 4$
8. $3x^2 - 6x - 45$
9. $4x^2 - 8x + 7$
10. $9x^2 - 4$

Compute the values of following expressions using R as a calculator

11. Circumference of a circle of radius 4
12. $e^2 - \sqrt{\pi}$, where e, π are universal constants
13. $\sin\left(\frac{\pi}{4}\right) - \tan\left(\frac{\pi}{4}\right)$
14. $1 - \cos^2\left(\frac{\pi}{3}\right) + \cot\left(\frac{\pi}{4}\right)$

Using the vector given below, create matrices of different orders and calculate the product of feasible matrices among them.

15. l = c (1, 4, 2, 5, 8, 2, 4, 11, 13, 18, 21, 7)