Assignment – 6

Solve the following quadratic equation in Matlab and display their roots.

Note : if roots are fraction then show their nearby rational number.

1) $x^2 - 7x + 12 = 0$

2) $(x-3)^2(x-7) = 0$

3) $x^4 - 7x^3 + 3x^2 - 5x + 9 = 0$

4) $6x^2 + 11x - 35 = 0$

5) $(x-2)^2 - 12 = 0$

Solve the following equation in Matlab.

1) $5x + 9y = 5$

   $3x - 6y = 4$

2) $x + 3y - 2z = 5$

   $3x + 5y + 6z = 7$

   $2x + 4y + 3z = 8$

3) $7x + 5y - 3z = 16$

   $3x - 5y + 2z = -8$

   $5x + 3y - 7z = 0$

4) $3x + 2y = 16$

   $7x + y = 19$

5) $4x + 3y = -2$

   $8x - 2y = 12$

Factorize and simplify the following Algebraic equation.

1) $x^2 - y^2$

2) $x^3 + y^3$

3) $(x^4 - 16)/(x^2 - 4)$

4) $x^4 + y^4$

5) $x^5 - y^5$

Find the limit of following functions.

1) $\lim_{x \to 0} \frac{x^3+5}{x^4+7}$

2) $\lim_{x \to 1} \frac{x-3}{x-1}$

3) $\lim_{x \to 1} \frac{1-\sqrt{x}}{1-x}$

4) $\lim_{x \to 0} \frac{\sin 5x}{3x}$

5) Show that limit of given function does not exist using left and right sided limits and also plot the graph for it.

$\lim_{x \to 3} \frac{x-3}{|x-3|}$