# Assignment no 1

**Qno1: Solve the following inequalities and show the solution set on the real line.**

a) $2x - \frac{1}{2} \geq 7x + \frac{7}{6}$

b) $-\frac{(6-x)}{4} < \frac{3x-4}{2}$

**Qno2: Solve the inequalities in Exercises 19–34, expressing the solution sets as intervals or unions of intervals.**

a) $\left|\frac{z}{5} - 1\right| \leq 1$

b) $\left|\frac{3r}{5} - 1\right| > \frac{2}{5}$

**Qno3:** Write an equation for each line described below:

i.   Passes through $(-12, -9)$ and has slope 0.
ii.  Passes through $(5, -1)$ and parallel to line $2x + 5y = 15$.

**Qno4.** Write the center and radius of the circle :

$$x^2 + y^2 - 3y - 4 = 0$$

**Qno5.** identify each function as a constant function, linear function, power function, polynomial (state its degree), rational function, algebraic function, trigonometric function, exponential function, or logarithmic function. Remember that some functions can fall into more than one category.

i.   $y = \frac{3+2x}{x-1}$
ii.  $y = \tan\pi x$
iii. $y = x^{5/2} \pm 2x + 1$
iv.  $y = \log_7 x$

**Qno6. If $f(x) = \sqrt{x}$, $g(x) = \frac{x}{4}$, $h(x) = 4x - 8$, find formula for the following:**

| i. $h(g(f(x)))$ | ii. $h\left(f(g(x))\right)$ |
|---|---|
| iii. $g\left(h(f(x))\right)$ | iv. $g\left(f(g(x))\right)$ |
| v. $f\left(g(h(x))\right)$ | vi. $f\left(h(f(x))\right)$ |