

Section 4: Linear and quadratic inequalities**Exercise**

1. Solve the following linear inequalities.
 - (i) $2x+3 < 10$
 - (ii) $5x+3 \geq 2x-9$
 - (iii) $4x+1 \leq 6x-7$
 - (iv) $5(x-3) \leq 2(2x+3)$
 - (v) $4(2x+5) \geq 3(3x-1)$
 - (vi) $\frac{2x+1}{3} > \frac{x-4}{2}$

2.
 - (i) What is the smallest integer value that satisfies the inequality $3x-1 > 7-x$?
 - (ii) What is the largest integer value that satisfies the inequality $2(1-x) > 3x+4$?

3. Solve the following quadratic inequalities.
 - (i) $x^2-4x-12 \leq 0$
 - (ii) $x^2-7x+6 > 0$
 - (iii) $x^2+2x-15 \geq 0$
 - (iv) $3x^2+5x+2 < 0$
 - (v) $4x^2-4x-3 > 0$
 - (vi) $1-x-2x^2 \geq 0$
 - (vii) $x^2 \geq 3x+10$
 - (viii) $x(x+3) > x+8$

4. Find the set of integer values that satisfy the following inequalities:
 - (i) $2x^2-5x-3 \leq 0$
 - (ii) $x^2+2x-1 < 0$

5. Solve the inequality $(x+3)^2 > (x-1)^2$.