

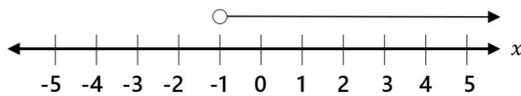
# LINEAR INEQUALITIES

**Task 1 – State all the integer values of  $x$  that satisfy the following inequalities.**

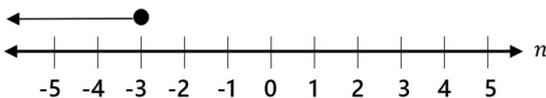
- 1)  $1 < x < 6$
- 2)  $-3 \leq x < 2$
- 3)  $4 < x \leq 9$
- 4)  $-5 < x \leq 1$
- 5)  $2 \leq x < 7$
- 6)  $10 < 2x \leq 12$
- 7)  $5 < 2x + 1 \leq 13$
- 8)  $-4 \leq 3x - 1 < 8$
- 9)  $7 < 2 + x \leq 12$
- 10)  $-12 \leq 5x - 3 < 12$
- 11)  $-8 < 2x - 3 \leq 6$

**Task 2**

12) Write down the inequality shown on the number line.



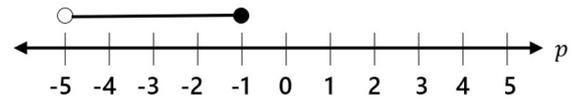
13) Write down the inequality shown on the number line.



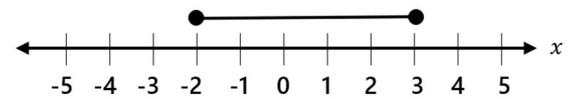
14) Write down the inequality shown on the number line.



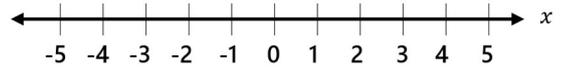
15) Write down the inequality shown on the number line.



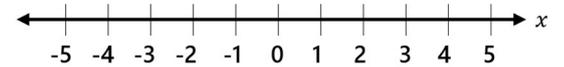
16) Write down the inequality shown on the number line.



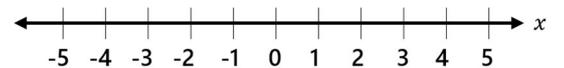
17) On the number line, show the inequality  $x > 3$



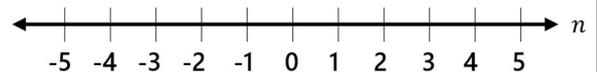
18) On the number line, show the inequality  $x \leq 3$



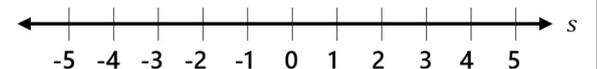
19) On the number line, show the inequality  $x \leq 5$



20) On the number line, show the inequality  $-1 < n < 2$

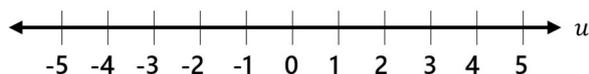


21) On the number line, show the inequality  $1 < s \leq 3$



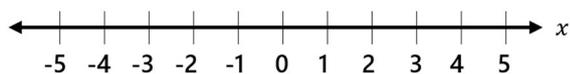
22) On the number line, show the inequality

$$-4 \leq u < 0$$



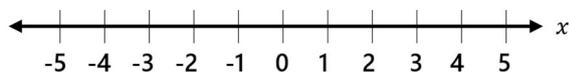
23) On the number line, show the inequality

$$2x > 8$$



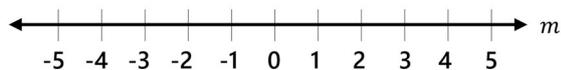
24) On the number line, show the inequality

$$x - 7 < -8$$



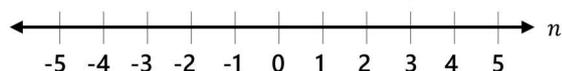
25) On the number line, show the inequality

$$3m + 8 \leq -m$$



26) On the number line, show the inequality

$$4 < 3n + 1 < 10$$



Task 3 – Solve each of the following linear inequalities.

27)  $x + 3 > 7$

28)  $x - 5 \leq 9$

29)  $4x > 20$

30)  $\frac{x}{3} < 6$

31)  $2n + 1 > 9$

32)  $3b - 4 \leq 11$

33)  $5n - 7 > 2$

34)  $6x - 3 < 15$

35)  $-4x + 5 \geq 21$

36)  $7 - 2x < 1$

37)  $3(x + 2) > 19$

38)  $5(2x - 1) \leq 29$

39)  $8 - 3u \geq 2$

40)  $\frac{2x-3}{4} < 5$

41)  $4(1 - x) > 2x + 6$

Challenge – Work out the set of values of  $x$  for which:

42)  $2x - 5 < x + 9$  and  $4x < x - 6$

43)  $x + 4 > 2 - x$  and  $16 + 4x > 6 + 3x$

44)  $-8 < 2x \leq 12$  and  $-12 \leq 2x + 1 < 8$