1. The sum of three subsequent odd numbers is 57. Find the three numbers.
2. The sum of two non-subsequent odd numbers is 70, their difference is 13. Find the two numbers.
3. The difference between two non-subsequent even numbers is 14, their product is 72. Find the two numbers.

For **Q.4** to **Q.10**, solve the inequalities and write their solution sets:

4. $\frac{-6}{x-5} \geq 4$
5. $\frac{3}{2x+1} \leq -2$
6. $|5x + 7| > 8$
7. $|4x - 3| \leq 2$
8. $|x + 12| < -6$
9. $|2x + 8| > -10$

For **Q.10** to **Q.14** , solve the quadratics by using the indicated methods:

10. $f(x) = x^2 - 3x - 4$ *factoring*
11. $f(x) = 6x^2 - 13x - 5$ *factoring*
12. $f(x) = x^2 + 2x + 10$ *formula*
13. $f(x) = 2x^2 - 3x - 6$ *formula*
14. $f(x) = x^2 - 8x + 16$ *formula*
15. $f(x) = x^2 - 2x - 3$ *completing the square*
16. $f(x) = 3x^2 + 21x - 12$ *completing the square*

Q.17 and **Q.18** find the vertex of the parabola and indicate the direction of the parabola:

17. $f(x) = -2x^2 - 20x - 57$
18. $f(x) = 3x^2 - 12x + 12$

Q.19 and **Q.20** find the radius and the centre of the circle:

19. $x^2 + y^2 - 20x + 2y - 3 = 0$

20. $-2x^2 - 2y^2 + 8x - 12y + 6 = 0$

21. Write the equation of the circle whose diameter is between the two points (1, -2) and (3, 4).

22. Determine whether the line $y = 5x + 1$ is tangent, secant or neither to the circle $(x + 6)^2 + (y - 3)^2 = 12.$

23. Write the equation of a line which is tangent to a circle at (2, -3) and the centre of the circle is (-5, 6) . (Note that any tangent line to a circle and its radius are perpendicular).

24. Write the equation of a vertical line that passes through the centre of the circle $x^2 + y^2 + 5x - 3y = 7.$

25. Write the equation of a horizontal line that passes through the vertex of the parabola $y = x^2 - 9x + 11.$