6) Binomial Expressions

1. Expand. $(4x - 3)^2$
2. Find the value of 99^2, by writing as a square of a binomial expression.
3. Expand and simplify. $(\frac{1}{3}a + b)(2a + b)$
4. Expand. $(x + 3)^3$
5. Fill in the blanks.
   $(3x - 1)^2 = 9x^2 \text{..........} + \text{............}$
6. Find the value of 102^2, by writing as a square of a binomial expression.
7. $x^2 + 6x + \text{..........}$
   Determine the term that should be added so that it can be written as a square of a binomial expression, add the relevant term to the given expression and then write it as a square of a binomial expression.
8. Fill in the blanks.
   $(a + \underline{\quad})^2 = a^2 + 8a + \underline{\quad}$
9. Expand and simplify. $(3x + 5)(2x - 1)$
10. Length of a rectangular plot of land is $(2x + 5)m$ and breadth is $(x - 3)m$. Find the area of the plot of land.
11. Find the value of $x^2 + y^2$, when x+y=9 and xy=20
12. Find the value of $p^2 - q^2$, when $p - q = 8$ and $pq = 33$.
13. Find the value of $a + b$, when $a^2 + b^2 = 13$ and $ab = 6$.
14. If $(x + a)^2 = x^2 + 4x + b$, Find the values of a and b.
15. Write down $x^3 - 6x^2 + 12x - 8$ as a cube of a binomial expression.
16. Length of a side of a cube is $(x + 3)cm$. Find the volume of the cube.
17. Find the value of 103^3, by writing as a cube of a binomial expression.
18. Find the value of $a^3 - b^3$, when $a - b = 3$ and ab=54.
19. Expand and simplify. $(a - \frac{1}{a})^3$.
20. Fill in the blanks.
    $(a + 5)^3 = a^3 + \underline{\quad} + 75a + \underline{\quad}$