Algebraic Expression Worksheet – 3

1. Simplify $\frac{13}{3}p^2q - \frac{1}{10}pq^2 + \frac{1}{5}pq - \frac{1}{8}q^2p + \frac{1}{9}qp^2 + \frac{1}{2}pq$.

2. Simplify $(\frac{1}{5}a^2 - \frac{3}{4}a + 9) - (\frac{1}{9}a - 5 + 4a^2) - (\frac{2}{9}a - \frac{2}{7}a^2 + 3)$.

3. Figure out the product of the pair of polynomials mention below.

i) -5m, 9mn   ii) 6ab, -7a²b.

4. Find the area of rectangular box whose length is $12a^2$ and breadth is $21b^2$.

5. Multiply $\frac{4}{15}p^4q^2$ by $\frac{5}{2}p^3q$.

6. Find the volume of rectangular oil tank whose length, breadth and height are $2m^3n$, $5n^2m$ and $3m^2n$.

7. Find the value of $(6x^6) \times (-1.3\ xy^2) \times (-13x^2y)$ when x = 2, y = 1.

8. Find the product of $(\frac{5}{6}a^2bc) \times (-5ab^2c) \times (\frac{1}{4}c^2ba)$.

9. Find the product of (1.3rt) × (0.2r) × (0 .18).

10. Express $(-\frac{9}{7}a^2b) \times (-\frac{5}{3}bc^2) \times (\frac{1}{4}a^4c)$ to monomial.

11. If the area of rectangular park is $16x^2 - 40y^2 - 24xy$ and one of its sides is 2x + 5y, find the length of adjacent side.

12. What should be subtracted from the polynomial $m^4 + 4m^3 + m^2 - 9m - 18$ so that the resulting polynomial is exactly divisible by $m^2 - 3 - m$.

13. By using proper identities, find the value of number that given below.

a) $(106)^2$ b) $(96)^2$ c) 295 × 305   d) $84^2 - 16^2$

14. Find the product of $(\frac{m^2}{4} + \frac{4}{n^2})\ (\frac{m^2}{4} - \frac{4}{n^2})$ by using proper identities.

15. Using the identities evaluate the following

 a) $(100.2)^2$ b) $(8.9)^2$ c) (100.3 × 99.7)

16. If $p - \frac{1}{p} = 4$, then find the value of $(p^2 + \frac{1}{p^2})$.

17. If m + n = 9 and mn = 15, then find the value of $m^2 + n^2$.

18. If $m^2 + n^2 = 40$ and mn = 12, find the values of (m + n) and (m − n).

19. Find the value of (p − 9) (p − 11) by using identity (x + a) (x +b) = x^2 + (a+b)x + ab.

20. If the two adjacent side of rectangular corn field are $7a^2 + 14ab + 6b^2$ and $3a^2 - 9ab + 4b^2$, find its area.