ASSIGNMENT OF MATHEMATICS CLASS VIII
ALGEBRAIC EXPRESSIONS AND IDENTITIES

Q.1. Identify the terms, their coefficients for each of the following expressions:

(i) $7x^2yz - 5xy$ (ii) $x^2 + x + 1$ (iii) $3x^2y^2 - 5x^2y^2z^2 + z^2$

(iv) $9 - ab + bc - ca$ (v) $\frac{a}{2} + \frac{b}{2} - ab$ (vi) $0.2x - 0.3xy + 05y$

Q.2. Classify the following polynomials as monomials, binomials, trinomials.

Which polynomials do not fit in any category?

(i) $x + y$ (ii) 1000 (iii) $x + x^2 + x^3 + x^4$

(iv) $7 + a + 5b$ (v) $2b - 3b^2$ (vi) $2y - 3y^2 + 4y^3$

Q.3. Add the following algebraic expressions:

(i) $3a^2b, -4a^2b, 9a^2b$

(ii) $\frac{2}{3}a, \frac{3}{5}a, -\frac{6}{5}a$

(iii) $4xy^2 - 7x^2y, 12x^2y - 6xy^2, -3x^2y + 5xy^2$

(iv) $\frac{3}{2}a - \frac{5}{4}b + \frac{2}{5}c, \frac{2}{3}a - \frac{7}{2}b + \frac{7}{2}c, \frac{5}{3}a + \frac{5}{2}b - \frac{5}{4}c$

Q.4. Subtract:

(i) – 5xy from 12xy

(ii) $2a^2$ from $-7a^2$

(iii) 2a – b from 3a – 5b

(iv) $2x^3 - 4x^2 + 3x + 5$ from $4x^3 + x^2 + x + 6$

Q.5. Take away :

Address: Plot No 420, Behind Shopprix Mall, Vaishali Sector 5, Ghaziabad – 201010
M: 9999907099, 9818932244 O: 0120-4130999
Website: www.vaishalieducationpoint.com , www.educationsolution.co

(i) – 5xy from 12xy

(ii) $2a^2$ from – $7a^2$

(iii) 2a – b from 3a – 5b

(iv) $2x^3 – 4x^2 + 3x + 5$ from $4x^3 + x^2 + x + 6$

Q.6. Subtract 3x – 4y – 7z from the sum of x – 3y + 2z and – 4x + 9y – 11z.

Q.7. Subtract the sum of $3l$ - 4m - $7n^2$ and $2l$ + 3m - $4n^2$ from the sum of $9l$ + 2m - $3n^2$ and - $3l$ + m + $4n^2$…….

Q.8. Simplify each of the following:

(i) $x^2 – 3x + 5 - \frac{1}{2}(3x^2 – 5x + 7)$

(ii) [5 – 3x + 2y – (2x – y)] – (3x – 7y + 9)

Q.9. Find the product of the following pairs of polynomials:

(i) 4, 7x (ii) – 4a, 7a (iii) – 4x, 7xy (iv) $4x^3$, - 3xy (v) 4x, 0

Q.10. Find the areas of rectangles with the following pairs of monomials as their length and breadth respectively:

(i) (x,y) (ii) (10x, 5y) (iii) ($2x^2$, $5y^2$) (iv) (4a, $3a^2$) (v) (3mn, 4np)

Q.11. Find each of the following products:

(i) (- $2x^2$) × ($7a^2x^7$) × ($6a^5x^5$) (ii) ($4s^2t$) × ($3s^3t^3$) × ($2st^4$) × (- 2)

(iii) ($5x^6$) × (- $10xy^4$) × (- $2x^6y^6$) × (10 xy)

Q.12. Multiply each of the following monomials:

(i) 3xyz, 5x, 0 **(ii) $\frac{6}{5}$ ab, $\frac{5}{6}$ bc, $\frac{12}{9}$ abc**

Q.13. Multiply $-\frac{4}{3}xy^3$ by $\frac{6}{7}x^2y$ and verify your result for x = 2 and y = 1.

Address: Plot No 420, Behind Shopprix Mall, Vaishali Sector 5, Ghaziabad – 201010
M: 9999907099, 9818932244 O: 0120-4130999
Website: www.vaishalieducationpoint.com , www.educationsolution.co

Q.14. Find the value of $(5a^6) \times (-10ab^2) \times (-2.1a^2b^3)$ for a = 1 and b = $\frac{1}{2}$.

Q.15. Find each of the following products:

(i) $5x^2 \times 4x^3$ **(ii) $-3a^2 \times 4b^2$**

(iii) $(-5xy) \times (-3x^2yz)$ **(iv) $\frac{1}{2}xy \times \frac{2}{3}x^2yz^2$**

Q.16. Find each of the following products:

(i) $(7ab) \times (-5ab^2c) \times (6abc^2)$ **(ii) $(-5a) \times (-10a^2) \times (-2a^3)$**

(iii) $(-4x^2) \times (-6xy^2) \times (-3yz^2)$ **(iv) $\left(-\frac{2}{7}a^4\right) \times \left(-\frac{3}{4}a^2b\right) \times \left(-\frac{14}{5}b^2\right)$**

Q.17. Write down the product of $-8x^2y^6$ and $-20xy$. Verify the product for x = 2.5, y = 1.

Q.18. Write down the product of $-8x^2y^6$ and $-20xy$. Verify the product for x = 2.5, y = 1.

Q.19. Evaluate $(3.2x^6y^3) \times (2.1x^2y^2)$ when x = 1 and y = 0.5

Q.20. Find the value of $(5x^6) \times (-1.5x^2y^3) \times (-12xy^2)$ when x = 1, y = 0.5.

Q.21. Evaluate $(2.3a^5b^2) \times (1.2a^2b^2)$ when a = 1 and b = 0.5.

Q.22. Evaluate $(-8x^2y^6) \times (-20xy)$ for x = 2.5 and y = 1.

Q.23. Evaluate each of the following when x = 2, y = -1.

(i) $(2xy) \times \left(\frac{x^2y}{4}\right) \times (x^2) \times (y^2)$ **(ii) $\left(\frac{3}{5}x^2y\right) \times \left(-\frac{15}{4}xy^2\right) \times \left(\frac{7}{9}x^2y^2\right)$**

Q.24. Find the product of $\frac{7}{2}s^2t$ and s + t. Verify the result for s = $\frac{1}{2}$ and t = 5.

Q.25. Multiply : $\left(3x - \frac{4}{5}y^2x\right)$ by $\frac{1}{2}xy$.

Q.26. Find the following products :

Address: Plot No 420, Behind Shopprix Mall, Vaishali Sector 5, Ghaziabad – 201010
M: 9999907099, 9818932244 O: 0120-4130999
Website: www.vaishalieducationpoint.com , www.educationsolution.co

(i) $100x \times (0.01x^4 - 0.01x^2)$ (ii) $121.5ab \times \left(ac + \frac{b}{10}\right)$

(iii) $0.1a \times (0.01a \times 0.001b)$

Q.27. Determine each of the following products and find the value of each for x = 2,y = 1.15, z = 0.01.

(i) $27x^2(1 - 3x)$ (ii) $xz\ (x^2 + y^2)$ (iii) $z^2(x - y)$ (iv) $(2z - 3x) \times (-4y)$

Q.28. Simplify the expression and evaluate them as directed:

(i) $x(x - 3) + 2$ for $x = 1$ (ii) $3y(2y - 7) - 3(y - 4) - 63$ for $y = -2$

Q.29. Add :

(i) $5m\ (3 - m)$ and $6m^2 - 13m$ (ii) $4y\ (3y^2 + 5y - 7)$ and $2(y^3 - 4y^2 + 5)$

Q.30. Subtract $3pq\ (p - q)$ from $2pq\ (p + q)$

Q.31. Add: (i) $p\ (p - q)$, $q\ (q - r)$ and $r\ (r - p)$ (ii) $2x\ (z - x - y)$ and $2y(z - y - x)$

Q.32. (i) Subtract: $3l\ (l - 4m + 5n)$ from $4l(10n - 3m + 2l)$

(ii) Subtract: $3a(a + b + c) - 2b(a - b + c)$ from $4c\ (-a + b + c)$

Q.33. Simplify each of the following expressions:

(i) $15a^2 - 6a(a - 2) + a(3 + 7a)$

(ii) $x^2(1 - 3y^2) + x(xy^2 - 2x) - 3y(y - 4x^2y)$

(iii) $4st\ (s - t) - 6s^2(t - t^2) - 3t^2(2s^2 - s) + 2st(s - t)$

Q.34. Find the product $24x^2(1 - 2x)$ and evaluate its value for $x = 3$.

Q.35. Find the product $-3y\ (xy + y^2)$ and find its value for $x = 4$ and $y = 5$.

Q.36. Multiply the monomial by the binomial and find the value of each for x = -1, y = 0.25 and z = 0.05:

(i) $15y^2(2 - 3x)$ (ii) $-3x(y^2 + z^2)$ (iii) $z^2(x - y)$ (iv) $xz(x^2 + y^2)$

Address: Plot No 420, Behind Shopprix Mall, Vaishali Sector 5, Ghaziabad – 201010
M: 9999907099, 9818932244 O: 0120-4130999
Website: www.vaishalieducationpoint.com , www.educationsolution.co

Q.37. Simplify :

(i) $2x^2(x^3 - x) - 3x(x^4 + 2x) - 2(x^4 - 3x^2)$

(ii) $x^3y(x^2 - 2x) + 2xy(x^3 - x^4)$

(iii) $3a^2 + 2(a + 2) - 3a(2a + 1)$

(iv) $x(x + 4) + 3x(2x^2 - 1) + 4x^2 + 4$

(v) $a(b - c) - b(c - a) - c(a - b)$

Q.38. Multiply (3x + 2y) and (5x + 3y).

Q.39. Multiply (2x + 3y) and (4x – 5y).

Q.40. Find the following products:

(i) $(x + 4)(x + 7)$ (ii) $(x - 11)(x + 4)$ (iii) $(x + 7)(x - 5)$

(iv) $(x - 3)(x - 2)$ (v) $(y^2 - 4)(y^2 - 3)$ (vi) $\left(x + \frac{4}{3}\right)\left(x + \frac{3}{4}\right)$

(vii) $(3x + 5)(3x + 11)$

Q.41. What must be added to $9x^2 - 24x + 10$ to make it a whole square?

Q.42. Find the product of the following binomials:

(i) $(2x + y)(2x + y)$ (ii) $(a + 2b)(a - 2b)$ (iii) $(a^2 + bc)(a^2 - bc)$

(iv) $\left(\frac{4x}{5} - \frac{3y}{4}\right)\left(\frac{4x}{5} + \frac{3y}{4}\right)$ (v) $\left(2x + \frac{3}{y}\right)\left(2x - \frac{3}{y}\right)$

Q.43. Using the formula for squaring a binomial, evaluate the following:

(i) $(102)^2$ (ii) $(99)^2$ (iii) $(1001)^2$ (iv) $(999)^2$

Q.44. If $x + y = 4$ and $xy = 2$, find the value of $x^2 + y^2$

Q.45. If $x - y = 7$ and $xy = 9$, find the value of $x^2 + y^2$

Q.46. Evaluate the following:

Address: Plot No 420, Behind Shopprix Mall, Vaishali Sector 5, Ghaziabad – 201010
M: 9999907099, 9818932244 O: 0120-4130999
Website: www.vaishalieducationpoint.com , www.educationsolution.co

(i) 107 × 103 (ii) 56 × 48 (iii) 95 × 97

Q.47. If 3x + 5y = 11 and xy = 2, find the value of $9x^2 + 25y^2$

Q.48. Find the following products:

(i) (x + 4)(x + 7) (ii) (x – 11) (x + 4) (iii) (x + 7)(x – 5)

(iv) (x – 3) (x – 2) (v) $(y^2 – 4)(y^2 – 3)$ (vi) (3x + 5)(3x + 11)

Q.49. Evaluate the following:

(i) 102 × 106 (ii) 109 ×107 (iii) 35 × 37 (iv) 53 × 55

(v) 103 × 96 (vi) 34 × 36 (vii) 994 × 1006

Q.50 What must be added to each of the following expression to make it a whole square?

(i) $4x^2 – 12x + 7$ (ii) $4x^2 – 20x + 20$

Address: Plot No 420, Behind Shopprix Mall, Vaishali Sector 5, Ghaziabad – 201010
M: 9999907099, 9818932244 O: 0120-4130999
Website: www.vaishalieducationpoint.com , www.educationsolution.co