

**WORKSHEET # 8 [4.4, 4.5, 4.6, 4.7, & 4.8]**

1. Identify the numerical coefficients:  
 $5x^3 + x^3y^2z^4 - z^2 - 27$   
[A] 5, 0, 0, -27      [B] 5, 1, -1, -27  
[C] 5, -27      [D] -27
2. Identify the numerical coefficients:  
 $3a^4 + a^3b^5c^6 - c^4 - 12$
3. Find the numerical coefficients of the two variable terms.  
a.  $-5a^2$       b.  $8b$
4. Classify as a monomial, binomial, or trinomial:  
 $3x^2$
5. Classify as a monomial, binomial, or trinomial:  
 $3x^2 - 7x$   
[A] trinomial      [B] binomial  
[C] monomial      [D] none of these
6. Find the degree of the polynomial:  $-4x^2 + 3x - 3$
7. Find the degree of the polynomial:  
 $3x^2 - x - 3x^3 - 2$   
[A] 4      [B] 3      [C] 1      [D] 2
8. Determine if the following is a polynomial. If it has a specific name, give that name.  
 $x^{-2} + 5$
9. Find the degree:  $v^2 + v^5w^2x^6 - x^3$
10. Find the value of  $3x^3 + 2x^2 - 2$  when  $x = -3$ .  
[A] -61      [B] 41      [C] -17      [D] -65
11. Evaluate  $-x^2 - 2xy + y^2$  when  $x = 6$  and  $y = 4$ .  
[A] -68      [B] -52      [C] -100      [D] 4
12. Combine like terms:  
 $(5p^5 - 6p^3 + 2) + (6p^5 + 5p + 8)$   
[A]  $-p^5 - 6p^3 + 5p - 6$   
[B]  $11p^5 - 6p^3 + 5p + 10$   
[C]  $11p^5 - p^3 + 10$       [D]  $-p^5 - 6p^3 - 5p - 6$
13. Combine like terms:  
 $(4x^2 - x - 3) + (4x^2 - 4x - 1)$
14. Simplify:  $x^2 - x^2 + 8x^2$
15. Simplify the polynomial:  
 $5h^2 - 7h + 3 + 8h^2 - 3h - 5$   
[A]  $13h^2 - 4h - 2$       [B]  $-3h^2 - 10h + 8$   
[C]  $-3h^2 - 4h + 8$       [D]  $13h^2 - 10h - 2$
16. Simplify the polynomial.  
 $2x^2 - x - 3x^2 + 4x - 5 - 3$
17. Simplify.  $5y + 6 + 8x + (-2y) - (-x)$   
[A]  $9x + 3y + 6$       [B]  $7x - 7y + 6$   
[C]  $7x + 3y - 6$       [D]  $9x - 7y - 6$
- Add:
18.  $(-2 + 5x^3y - 4xy) + (-7x^3y - 7xy + 3)$
19.  $(e^2 - e + 3) + (e + 6)$   
[A]  $e^2 - e + 9$       [B]  $e^2 - 2e - 3$   
[C]  $e^2 + 9$       [D]  $e^2 - 3$
20.  $(-6 - 5x^2 - x) + (3x^2 + 7x + 2)$

Subtract:

21.  $(3x^2 + x - 3) - (-7x^2 - 3x + 2)$   
[A]  $10x^2 + 4x - 1$  [B]  $10x^2 + 4x - 5$   
[C]  $10x^2 - 2x - 1$  [D]  $10x^2 - 4x - 5$
22.  $(-m^4 + 7m^3 + 6m) - (-7m^4 + 9m^3 - 9m^2 - 8m)$
23.  $(3x^3 + 2x^2 - 3) - (6x^3 - 7x^2 + 6)$   
[A]  $-3x^3 + 9x^2 - 9$  [B]  $9x^3 - 5x^2 + 3$   
[C]  $9x^3 - 5x^2 - 9$  [D]  $-3x^6 + 9x^4 - 9$
24.  $(8r^4 - 4r^2 - 4r) - (2r^4 + 3r^3 - 6r^2 - 3r)$   
[A]  $6r^4 + 3r^3 - 10r^2 - 7r$   
[B]  $6r^4 + 3r^3 + 2r^2 - r$   
[C]  $6r^4 - 3r^3 + 2r^2 - r$   
[D]  $6r^4 - 3r^3 - 10r^2 - 7r$
25. Simplify the difference.  
 $(8x - 3y + 4z) - (-9x + 2y + z)$

26. Multiply.  $(5t^3)(5t^3)$

Multiply:

27.  $a^{-3}(a^4)(a^{-4})$   
[A]  $a^{48}$  [B]  $a^3$  [C]  $\frac{1}{a^4}$  [D]  $\frac{1}{a^3}$

28.  $-5x^4y^5(4x^5 + x^4y^4 + 3y)$

Multiply.

29.  $5x^4(3x^3 - 3y)$   
[A]  $15x^7 - 15x^4y$  [B]  $8x^3 + 2xy$   
[C]  $8x^7 - 15x^4y$  [D]  $15x^{12} - 3y$
30.  $(4x^2y^3)(4x^2y^2)$

Multiply:

31.  $2n^2(5n^3 + n^2 - 5n + 3)$
32.  $(2x + 9)(3x + 5)$   
[A]  $6x^2 - 37x + 45$  [B]  $6x^2 + 37x - 45$   
[C]  $6x^2 + 37x + 45$  [D]  $6x^2 - 17x + 45$
33.  $(5x + 4)(2x - 9)$
34.  $(x + 4)(x^2 + 4x + 2)$
35. Expand and simplify.  $(x + 1)(x^2 + x - 1)$   
[A]  $x^3 + x^2 - 1$  [B]  $x^3 + 2x^2 - 1$   
[C]  $x^3 - 1$  [D]  $x^3 + 2x^2 - 2x - 1$
36. Simplify:  $(x + 2)(x + 1) - 3x(x - 5)$
37. Multiply using the vertical format:  
$$\begin{array}{r} 6y^2 - 5y + 5 \\ \times \quad y - 3 \\ \hline \end{array}$$
  
[A]  $6y^3 - 23y^2 + 20y - 15$   
[B]  $-12y^3 + 10y^2 + 5y - 15$   
[C]  $6y^2 - 4y + 2$   
[D]  $6y^3 + 13y^2 - 10y + 15$

Multiply:

38.  $(t - 8)^2$
39.  $(e - 1)^2$   
[A]  $e^2 - 2e + 1$  [B]  $e^2 + 2e + 1$   
[C]  $e^2 + 1$  [D]  $e^2 - 1$
40.  $(4x + 5y)^2$
41.  $\left(6x^2 - \frac{1}{2}\right)^2$

Multiply:

42.  $(3x^2 - 2)^2$

[A]  $9x^4 - 4$

[B]  $9x^4 - 12x^2 + 4$

[C]  $9x^4 - 12x^2 - 4$

[D]  $9x^2 - 6x + 4$

43.  $(5g + 3)(5g - 3)$

44.  $\left(2x - \frac{5}{8}y\right)\left(2x + \frac{5}{8}y\right)$

[A]  $2x^2 - \frac{25}{64}y$

[B]  $4x^2 - \frac{5}{8}$

[C]  $4x^2 - \frac{5}{8}y^2$

[D]  $4x^2 - \frac{25}{64}y^2$

45. Divide:  $\frac{3x^8 - 2x^7 - 6x^{11}}{3x^2}$

[A]  $x^8 - 2x^7 - 2x^{11}$

[B]  $x^8 - \frac{2}{3}x^7 - 2x^{11}$

[C]  $x^6 - \frac{2}{3}x^5 - 2x^9$

[D]  $x^6 - 2x^5 + x^9$

46. Divide.  $\frac{4x^2 - 12x + 5}{-4x}$

47. Divide:  $(8x^9 - 12xy + 5) \div 4x$

48. Divide.  $\frac{15x^3y^3 + 25xy^2 + 5xy}{5xy}$

Divide:

49.  $\frac{2x^3 + x + 1}{x + 1}$

[A]  $2x^2 - x - 1 + \frac{2}{x + 1}$

[B]  $2x^2 - 2x - 1 + \frac{3}{x + 1}$

[C]  $2x^2 - x + 2 - \frac{2}{x + 1}$

[D]  $2x^2 - 2x + 3 - \frac{2}{x + 1}$

50.  $(3x^3 - x^2 - 4x - 164) \div (x - 4)$