

## Exam 1 (Polynomials and Factoring) Review Sheet

### Topics:

- Multiplying and Dividing Monomials
- Negative Exponents and Zero Exponents
- Scientific Notation
- Multiplying and Dividing Polynomials by Monomials
- Multiplying Polynomials
- Factoring out the Greatest Common Factor (GCF)
- Factoring Quadratic Trinomials
- Factoring the Difference of Two Perfect Squares
- Factoring Completely

In 1 – 10, perform the indicated operation and simplify the result.

1.  $(-2x^3y^5)(3ax^2)$

6.  $(x-10)^2$

2.  $\frac{-40x^3mg^2}{10xmg^4}$

7.  $\frac{6w^3+8w^2-2w}{2w}$

3.  $2x(x^3-5x^2+1)$

8.  $\frac{(2x^4)(8x^7)}{2x^5}$

4.  $-3a^2b(5a^5b^2-ab+10b)$

9.  $\frac{6w^3+8w^2-2w}{2w}$

5.  $(x-4)(x+8)$

10.  $(-4a^3b)^2$

11. Express  $9^3 \cdot 9^8 \cdot 9$  as a power of 9.

12. Express the product of  $7 \times 10^5$  and  $2 \times 10^4$  in scientific notation.

13. Express the quotient  $16 \times 10^{-6}$  and  $2 \times 10^{-11}$  in scientific notation.

14. Evaluate  $5x^0 - (2x)^0 + \left(\frac{1}{3}\right)^{-3}$ .

In 15 – 26, factor completely.

15.  $b^2 - 25$

21.  $y^2 + 11y + 18$

16.  $4x^2 - 81$

22.  $x^2 - 7x + 10$

17.  $60x^3y^2 - 18x^2y$

23.  $5a^2b - 15ab^2 + 5ab$

18.  $4a^3b^2c^4 - 2a^2bc^2$

24.  $3x^4 + 15x^3 - 42x^2$

19.  $a^2 - a - 2$

25.  $d^4 - 16d^2$

20.  $x^2 - 6x + 9$

26.  $2x^2 + 10x - 12$