

**WORKSHEET # 9 [5.1, 5.2, & 5.3]**

1. Find the greatest common factor of  $4x$ ,  $2x^2$ , and  $6x^2 + 2x$ .

[A]  $2x$       [B]  $6x + 2$       [C]  $x$       [D]  $2$

[1] \_\_\_\_\_

2. Find the greatest common factor of  $x^2y^3$ ,  $x^3y^7$ , and  $x^7y^2$ .

[2] \_\_\_\_\_

3. Find the greatest common factor of 57, 78, and 93.

[A] 3      [B] 6      [C] 93      [D] 9

[3] \_\_\_\_\_

4. Find the greatest common factor of  $216a^3b^3$  and  $-16a^3b$ .

[4] \_\_\_\_\_

Factor:

5.  $36x^6 - 42x^9$

[5] \_\_\_\_\_

6.  $15x^5 - 12x^7$

[A]  $3x^5(5 - 4x^2)$       [B]  $3x^4(5x - 4x^6)$

[C]  $3(5x^5 - 4x^7)$       [D]  $x^5(15 - 12x^2)$

[6] \_\_\_\_\_

7. Factor out the GCF from the polynomial.  
 $3(x - 7) + w(x - 7)$

[A]  $(3 + w)(x + 7)$       [B]  $(w - 3)(x + 7)$

[C]  $(3 + w)(x - 7)$       [D]  $(w - 3)(x - 7)$

[7] \_\_\_\_\_

8. Factor out the GCF from the polynomial.  
 $3(x - 2) + w(x - 2)$

[A]  $(3 + w)(x - 2)$       [B]  $(w - 3)(x - 2)$

[C]  $(w - 3)(x + 2)$       [D]  $(3 + w)(x + 2)$

[8] \_\_\_\_\_

9. Factor completely:  $42x^2y - 24x^2 + 24x$

[9] \_\_\_\_\_

10. Factor out the GCF from the polynomial.  
 $t(x + 4) + 6(x + 4)$

[10] \_\_\_\_\_

11. Factor by grouping:  $5x^2 + 25x + 3x + 15$

[A]  $(5x + 3)(x + 5)$       [B]  $(5x + 5)(x + 3)$

[C]  $5 + (x + 3)(x + 5)$       [D]  $x(5x + 5) + 15$

[11] \_\_\_\_\_

12. Factor by grouping:  $x^2 - 3x + 2x - 6$

[12] \_\_\_\_\_

Factor:

13.  $3x^2 + 12x + 2x + 8$

[A]  $x(3x + 4) + 8$       [B]  $(3x + 4)(x + 2)$

[C]  $(3x + 2)(x + 4)$       [D]  $3 + (x + 2)(x + 4)$

[13] \_\_\_\_\_

14.  $x^2 - 144$

[A]  $(x - 12)(x - 12)$       [B]  $(x + 12)(x + 12)$

[C]  $(x + 12)(x - 10)$       [D]  $(x + 12)(x - 12)$

[14] \_\_\_\_\_

Factor:

15.  $49x^2 - 64y^2$

[A]  $(7x+8)(7x-8)$       [B]  $(7x+8y)^2$

[C]  $(7x+8y)(7x-8y)$       [D]  $(7x-8y)^2$

[15] \_\_\_\_\_

16.  $49x^2 - 64y^2$

[16] \_\_\_\_\_

17.  $-3x^4y^4 + 75$

[A]  $(x^3y^3 - 5)(-3xy - 15)$

[B]  $-3(x^2y^2 - 5)(x^2y^2 + 5)$

[C]  $-3(x^2y^2 - 5)^2$       [D]  $-9(x^4y^4 + 25)$

[17] \_\_\_\_\_

18.  $-5x^4y^4 + 20$

[A]  $-5(x^2y^2 - 2)(x^2y^2 + 2)$

[B]  $-25(x^4y^4 + 4)$       [C]  $-5(x^2y^2 - 2)^2$

[D]  $(x^3y^3 - 2)(-5xy - 10)$

[18] \_\_\_\_\_

19.  $-3x^4y^4 + 27$

[A]  $-3(x^2y^2 - 3)^2$       [B]  $-9(x^4y^4 + 9)$

[C]  $(x^3y^3 - 3)(-3xy - 9)$

[D]  $-3(x^2y^2 - 3)(x^2y^2 + 3)$

[19] \_\_\_\_\_

20.  $4x^2y^2 - 100$

[20] \_\_\_\_\_