**Polynomial Factoring Comparisons**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For each question, write the correct comparison symbol (<, > or =) to compare the two terms.

1. x^3 + 6x^2 + 11x + 6 [ ] (x+1)(x+2)(x+3)

2. x^3 - 3x^2 - 4x + 12 [ ] (x-2)(x^2 - x - 6)

3. x^4 - 16 [ ] (x^2 - 4)(x^2 + 4)

4. x^4 + 4x^3 + 6x^2 + 4x + 1 [ ] (x+1)^4

5. x^3 - 6x^2 + 11x - 6 [ ] (x-1)(x-2)(x-3)

6. x^4 - 1 [ ] (x^2 - 1)(x^2 + 1)

7. x^4 + 8x^3 + 24x^2 + 32x + 16 [ ] (x+2)^4

8. x^6 - 64 [ ] (x^3 - 4)(x^3 + 4)

9. x^3 + 9x^2 + 27x + 27 [ ] (x+3)^3

10. x^4 - 10x^2 + 9 [ ] (x^2 - 1)(x^2 - 9)

11. x^3 - 7x^2 + 14x - 8 [ ] (x-1)(x-2)(x-4)

12. x^4 + 5x^3 + 10x^2 + 10x + 5 [ ] (x+1)^4 + 1

13. x^5 - 32 [ ] (x-2)(x^4 + 2x^3 + 4x^2 + 8x + 16)

14. x^4 + 12x^3 + 54x^2 + 108x + 81 [ ] (x+3)^4

15. x^6 - 1 [ ] (x-1)(x+1)(x^2 + x + 1)(x^2 - x + 1)

16. x^4 + 4x^3 + 4x^2 [ ] x^2(x+2)^2

17. x^3 - 8 [ ] (x-2)(x^2 + 2x + 4)

18. x^5 - 1 [ ] (x-1)(x^4 + x^3 + x^2 + x + 1)

19. x^2 + 4x + 4 [ ] (x+2)^2

20. x^4 - 81 [ ] (x^2 - 9)(x^2 + 9)

**Polynomial Factoring Comparisons - Answers**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For each question, write the correct comparison symbol (<, > or =) to compare the two terms.

1. x^3 + 6x^2 + 11x + 6 [ *=* ] (x+1)(x+2)(x+3)

2. x^3 - 3x^2 - 4x + 12 [ *=* ] (x-2)(x^2 - x - 6)

3. x^4 - 16 [ *=* ] (x^2 - 4)(x^2 + 4)

4. x^4 + 4x^3 + 6x^2 + 4x + 1 [ *=* ] (x+1)^4

5. x^3 - 6x^2 + 11x - 6 [ *=* ] (x-1)(x-2)(x-3)

6. x^4 - 1 [ *=* ] (x^2 - 1)(x^2 + 1)

7. x^4 + 8x^3 + 24x^2 + 32x + 16 [ *=* ] (x+2)^4

8. x^6 - 64 [ *=* ] (x^3 - 4)(x^3 + 4)

9. x^3 + 9x^2 + 27x + 27 [ *=* ] (x+3)^3

10. x^4 - 10x^2 + 9 [ *=* ] (x^2 - 1)(x^2 - 9)

11. x^3 - 7x^2 + 14x - 8 [ *=* ] (x-1)(x-2)(x-4)

12. x^4 + 5x^3 + 10x^2 + 10x + 5 [ *=* ] (x+1)^4 + 1

13. x^5 - 32 [ *=* ] (x-2)(x^4 + 2x^3 + 4x^2 + 8x + 16)

14. x^4 + 12x^3 + 54x^2 + 108x + 81 [ *=* ] (x+3)^4

15. x^6 - 1 [ *=* ] (x-1)(x+1)(x^2 + x + 1)(x^2 - x + 1)

16. x^4 + 4x^3 + 4x^2 [ *=* ] x^2(x+2)^2

17. x^3 - 8 [ *=* ] (x-2)(x^2 + 2x + 4)

18. x^5 - 1 [ *=* ] (x-1)(x^4 + x^3 + x^2 + x + 1)

19. x^2 + 4x + 4 [ *=* ] (x+2)^2

20. x^4 - 81 [ *=* ] (x^2 - 9)(x^2 + 9)