

Name: _____ Per: _____ Date: _____
Serafino • Algebra 2E

4B-3 Factoring Polynomials by Grouping

Factor complexly. Find all intercepts. Sketch with the real x-intercept and the y-intercept.

1. $x^3 - 5x^2 - 9x + 45$

2. $x^3 - 2x^2 - 4x + 8$

3. $x^3 + 2x^2 + 7x + 14$

4. $3x^3 - 12x^2 + 2x - 8$

5. $5x^3 + 5x^2 + x + 1$

6. $2x^3 - 12x^2 + 5x - 30$

7. $x^4 - 2x^3 - 4x^2 + 8x$

8. $x^4 - 5x^3 - 9x^2 + 45x$

9. $x^4 + x^3 - 16x^2 - 16x$

10. $4x^3 - 4x^2 - 9x + 9$

11. $16x^3 - 48x^2 - x + 3$

12. $9x^3 + 18x^2 - 4x - 8$

13. $3x^3 + 6x^2 - 4x - 24$

14. $3x^3 - x^2 + 3x - 1$

15. $x^3 + 7x^2 + 4x + 28$

16. $-x^3 - 4x^2 + 2x + 8$

17. $2x^3 + 8x^2 + 4x = -16$

18. $-x^3 - x^2 + 16x + 16$