

9.8 Factor by Grouping

Factoring Polynomials:

1. Factor out the greatest common factor(GCF).
2. If the polynomial has two or three terms, look for a difference of two squares, a product of two squares or a pair of binomial factors. (In other words, look for patterns/special cases!)
3. If there are four or more terms, group terms and factor to find common binomial factors.
4. As a final check, make sure there are no common factors other than 1.

EXAMPLES:

1) 6x3 + 3x2 – 4x – 2 2) 8t4 + 12t3 + 16t + 24 3) 4x2 – 20x + 3x – 15

4) 5x4 + 20x3 + 6x + 24 4) 2w3 + w2 – 14w – 7 5) 9x2 – 12x + 3x – 4

6) 45m4 – 9m3 + 30m – 6m 7) xy + 4y – 2x – 8

8) 2x2 – 6xy + 5x – 15y 9) 6 + 2y + 3x2 + x2y