

Factoring Monomials and By Grouping

Name _____

Factor.

1. $18x - 12$

2. $21x + 14$

3. $4y^2 - 16xy$

4. $12x^2 - 16x^3$

5. $6x^5 - 8x^4 + 2x^3$

6. $9x + 3x^2 - 6x^3$

7. $8a^3b^3 - 4a^2b^2 + 4ab + 16ab^2$

8. $-3x^3y + 2x^2y - 5xy$

Answers: 1. $6(3x - 2)$ 2. $7(3x + 2)$ 3. $4y(y - 4x)$ 4. $4x^2(3 - 4x)$ 5. $2x^3(3x^2 - 4x + 1)$
6. $3x(3 + x - 2x^2)$ 7. $4ab(2a^2b^2 - ab + 1 + 4b)$ 8. $-xy(3x^2 - 2x + 5)$ or $xy(-3x^2 + 2x - 5)$

Factor by grouping.

9. $ab + 3a + 2b + 6$

10. $ab + 2a + 5b + 10$

11. $ac + 4a - 2c - 8$

12. $bc + 8b - 3c - 24$

13. $2x^2 + 3xy + 4x + 6y$

14. $3x^2 + 12x + 4xy + 16y$

15. $x^3 + 3x^2 + 4x + 12$

16. $x^2 + 3x + 4x + 12$

17. $2x^2 - 3x + 6x - 9$

Answers: 9. $(b+3)(a+2)$ 10. $(b+2)(a+5)$ 11. $(c+4)(a-2)$ 12. $(c+8)(b-3)$ 13. $(2x+3y)(x+2)$
14. $(x+4)(3x+4y)$ 15. $(x+3)(x^2+4)$ 16. $(x+3)(x+4)$ 17. $(2x-3)(x+3)$