

5.6b MORE FACTORING

Can I take anything out? (ALWAYS ASK THIS FIRST!!)

1. $18x^2y - 9x$

Is it the difference of two perfect squares? If so, will it factor again? ($x^2 + y^2$ is prime!!)

2. $4x^2 - 9$

3. $x^4 - 81$

4. $9x^2 - 81$

Can I break the trinomial (three terms) into two binomials? (Note the leading coefficient)

5. $x^2 - 6xy - 27y^2$

6. $6x^2 - 7x + 2$

Can I break the **FOUR** terms into groups of two and factor?

7. $x^3 + x^2y - 9x - 9y$

STRATEGY FOR FACTORING COMPLETELY:

A. Always look for the **greatest common factor** first !! Ask: Can I take anything out?

B. 2 TERMS

It will not factor further unless it is the **difference of squares**.

Remember: $x^2 - y^2 =$ _____ But $x^2 + y^2$ is _____

C. **3 TERMS** - choose method based on leading coefficient

D. **4 TERMS** – grouping

E. Check to see if you can **factor again**

Factor Completely.

1. $3x - 9$

2. $x^2 - 9$

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

4. $3x^2 - 6x + 9$

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

6. $4x^2 - 4x + 1$

7. $4x^2 - 16$

8. $6x^2 - x - 1$

9. $6x^2 + 20x - 16$

10. $8x^4 - 8y^4$

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

12. $x^2 - 42 - x$

13. $-x^2 - xy + 56y^2$

14. $6x^2 - 6y^2 + 5xy$

15. $x^2 + 100$