

5.6a 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**: ex: $x^3 + x^2y - xy^2 - y^3$

Factor Completely

1. $3x - 9$

2. $x^2 - 9$

3. $x^2 - 9x$

4. $x^2 - 9x - 20$

5. $3x^2 - 6x + 9$

6. $-3x^2 + 9x + 12$

7. $3x^2 + 11x + 6$

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

9. $3x^2 + 12$

FACTOR COMPLETELY. INDICATE IF PRIME.

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

2. $x^5 - 4x^4 + 7x^3$

3. $-18x^3 - 3x^2 + 15x$

4. $25x^2 + y^2 + 10xy$

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

6. $8x^2 - 3y^2 + 10xy$

7. $10x^2 + 19x + 6$

8. $9 + 4x^2$

9. $24x^2 + 10x - 4$

10. $x^3 - 5x^2 - 25x + 125$