

Name _____
Date _____

Introduction to Technical Mathematics
Class #09-B

Factoring - Some that are More Difficult

Quality - Accuracy - Transfer - 100%

Section 1. Factoring Trinomials in the form $ax^2 + bx + c$, when $a > 1$

1. Consider: $2x^2 + 11x + 5$ Use a Technique Called: _____

Test #1: _____

Factor: $x^2 + 11x + 10$

Consider: $2x^2 + 11x + 5$

Factor: $x^2 - 11x + 18$

Consider: $3x^2 - 11x + 6$

Factor: $x^2 - 8x - 20$

Consider: $4x^2 - 8x - 5$

Factor: $x^2 + 12x - 45$

Consider: $5x^2 - 12x - 9$

Factor: $10x^2 + 13x + 4$

Factor: $4x^2 - 25x + 25$

***IN 2 VARIABLES

Factor: $4x^2 + 5xy - 6y^2$

Factor: $4x^2 - 9xy - 9y^2$

Section 2. F.O.I.L.: Multiplication of the "Sum and Difference" of Two Numbers.

1. F.O.I.L. Is there a Pattern?

a. $(x + 7)(x - 7)$

b. $(a - 3)(a + 3)$

c. $(2x + 7)(2x - 7)$

d. $(5 + c)(5 - c)$

e. $(8x + 3)(8x - 3)$

2. Describe Each Outcome:

This result is known as:

3. More: Use the Shortcut. Use and be able to recognize the Pattern.

a. $(c + d)(c - d)$ _____

b. $(r^3 + s^3)(r^3 - s^3)$ _____

c. $(7 - 20c)(7 + 20c)$ _____

d. $(.5 + .9x)(.5 - .9x)$ _____

e. $(\frac{3}{4}c + \frac{2}{3})(\frac{3}{4}c - \frac{2}{3})$ _____

Section 3. Reverse F.O.I.L.: Factoring's First Steps.

Step 1: Recognizing and Factoring the Difference of Two Squares. **FACTOR** the following:

1. $x^2 - 25$ _____

2. $x^2 - 100$ _____

3. $x^2 - 49$ _____

4. $n^2 - 81$ _____

5. $16 - n^2$ _____

6. $25x^2 - 36$ _____

7. $100x^2 - 9y^2$ _____

8. $\frac{4}{9}y^2 - \frac{1}{16}$ _____

9. $\frac{25}{81}c^2 - \frac{121}{144}d^2$ _____

10. $.25a^2 - .36b^2$ _____

Section 4. An Advanced Technique: Factoring by Substitution.

1. $(a + b)^2 - (a - b)^2$

2. $b(a + c)^2 - b$

HW Section:

Section(s)	Page(s)	Problem(s)
8.3	282 → 283	3 → 39 Odd
8.4	287	1 → 29 Odd