

Name \_\_\_\_\_  
Date \_\_\_\_\_

Introduction to Technical Mathematics  
Class #10 – B

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*Solutions of the Quadratic Equation*

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**Section 1. Factoring Completely:**

1. When asked to “Factor” any polynomial, the reality of that request is that the polynomial will be “Factored Completely”.

Rules for “Factor Completely”.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

2. Factor the Following “Completely”. Factor the following expressions using our Reading Backward Technique. Check to see if there is a “GCF” to be factored from each expression first. If the trinomial is “prime”, write “prime” on the first line.

2. Factor the Following:

a.  $3x^2 + 3$

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b.  $12x^2 - 24x$

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c.  $ax^2 + 2ax + 5a$

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d.  $-x^2 + 5x + 11$

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

e.  $x^2 - 25$

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

f.  $x^2 - 121$

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

g.  $25x^2 - 49y^2$

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h.  $100a^2 - \frac{81}{121}b^2$

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i.  $x^2 + 14x + 24$

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j.  $x^2 - 15x + 36$

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k.  $x^2 - 12x - 28$

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l.  $x^2 + 10x - 16$

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m.  $5x^2 + 9x + 4$

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n.  $7x^2 + 5x - 2$

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o.  $10x^2 + x - 2$

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p.  $12x^2 + 17x + 6$

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q.  $x^4 - 16$

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r.  $3x^2 - 75$

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s.  $5x^3 - 125x$

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t.  $x^2 - 13x^2 + 36$

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3. Some that May Be Tougher.

a.  $2x^2 + 2x - 12$

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b.  $3n^3 + 24n^2 - 60n$

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c.  $x^2 + 14x - 24$

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d.  $3x^3 - 36x^2 + 33x$

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e.  $3x^2 - 24x + 48$

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f.  $6x^3y^2 + 10x^2y^3 + 8x^2y^2$

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g.  $0.5x^2 - 0.08$

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h.  $7x^2y^2z^2 - 28x^2y^2$

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**Chapter 9 – 1**

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**Section 1. Reducing Fractions to Lowest Terms:**

1. Mr. Abel's Rule: No fraction can be simplified, or reduced to lowest terms, unless it is in the form:

\_\_\_\_\_

There are ONLY two ways to make this happen:

\_\_\_\_\_

\_\_\_\_\_

2. The Property of CANCELLATION in division: \_\_\_\_\_

\_\_\_\_\_

3. Cancellation Practices: RIGHT and wrong.

a.  $\frac{45}{27}$  \_\_\_\_\_

b.  $\frac{3x + 6}{3x}$  \_\_\_\_\_

c.  $\frac{2 - x}{8 - 4x}$  \_\_\_\_\_

d.  $\frac{x + 2}{y - 2}$  \_\_\_\_\_

**Section 2. A "SPECIAL" Factorization:**

4. Proof: Simplify:  $\frac{x - 1}{1 - x}$

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**Chapter 9 – 1**

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**Section 2. A "SPECIAL" Factorization:**

4. Proof: Simplify:  $\frac{x - 1}{1 - x}$

5. Simplify the Following:

a.  $\frac{2c - 5}{5 - 2c}$  \_\_\_\_\_

b.  $\frac{x^2 - 25}{25 - x^2}$  \_\_\_\_\_

c.  $\frac{+5xy}{+45x^2y^2}$  \_\_\_\_\_

d.  $\frac{18(5 - y)}{27(5 - y)}$  \_\_\_\_\_

e.  $\frac{6x^2(r - 2s)}{2x(r - 2s)}$  \_\_\_\_\_

f.  $\frac{9x(x + 2)}{9x}$  \_\_\_\_\_

g.  $\frac{(x + 4)^2}{x + 4}$  \_\_\_\_\_

h.  $\frac{y^2 - 25}{5y + 25}$  \_\_\_\_\_

i.  $\frac{x^2 - 4}{(x - 2)^2}$  \_\_\_\_\_

j.  $\frac{x^2 - y^2}{3y - 3x}$  \_\_\_\_\_

k.  $\frac{3m}{6m - 9m^2}$  \_\_\_\_\_

l.  $\frac{a^2 - a - 6}{a^2 - 9}$  \_\_\_\_\_

m.  $\frac{x^2 - 8x - 48}{x^2 + x - 12}$  \_\_\_\_\_

n.  $\frac{x^2 - 7x + 12}{x^2 + x - 20}$  \_\_\_\_\_

**Homework Section**

Page(s)	Section(s)	Problem(s)
287	8.4	1 → 23 Odd
302	9.1	13 → 35 Odd