

Name \_\_\_\_\_

Introduction to Technical Mathematics

Date \_\_\_\_\_

Class #11-B www.wnyssis.com

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*Solving and Checking Quadratic Equations.*

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**Section 1. Special Arithmetic**

1. Consider:  $x^2 + 5x - 6 = 0$ . Evaluate for  $x = -6$  and  $x = 1$

2. Consider:  $x^2 + 9x + 18 = 0$ . Evaluate for  $x = -6$  and  $x = -3$

3. Consider:  $2x^2 - 3x - 5 = 0$ . Evaluate for  $x = -1$  and  $x = \frac{5}{2}$

4. Consider:  $6x^2 + 7x - 5 = 0$ . Evaluate for  $x = -\frac{5}{3}$  and  $x = \frac{1}{2}$

**Section 2. Solution and Check of Quadratic Equations:**

5. Solve and Check the following equations.

a.  $x^2 = 3x + 28$

a. \_\_\_\_\_

b.  $x^2 + 4x = 21$

b. \_\_\_\_\_

c.  $5x^2 + 12x - 9 = 0$

c. \_\_\_\_\_

d.  $2x^2 + 10 = 9x$

d. \_\_\_\_\_

e.  $x(x - 2) = 35$

e. \_\_\_\_\_

f.  $x = \frac{40}{x - 3}$

f. \_\_\_\_\_

**Section 3. Some Special Case Equations to Solve:**

1.  $c^2 = 8c$

1. \_\_\_\_\_

2.  $x^2 = 16$

2. \_\_\_\_\_

**Section 4. Some that are tougher??**

3.  $4x^2 - 12x + 9 = 0$

3. \_\_\_\_\_

4.  $6x^2 - 7x - 20 = 0$

**Section 3. The Sum and The Difference between Two Perfect Cubes.**

**Factoring the Sum and the Difference of Two Cubes: Section 8.5**

Review - Perfect Cubes:	$1^3$	_____	$6^3$	_____
	$2^3$	_____	$7^3$	_____
	$3^3$	_____	$8^3$	_____
	$4^3$	_____	$9^3$	_____
	$5^3$	_____	$10^3$	_____

**Factoring the Difference of Two Cubes:**  $(a - b)(a^2 + ab + b^2)$

**Factoring the Sum of Two Cubes:**  $(a + b)(a^2 - ab + b^2)$

**1<sup>st</sup> Example:**  $x^3 + 8$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2<sup>nd</sup> Example:**  $x^3 - 125$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**3<sup>rd</sup> Problem:**  $x^3 - 1$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4<sup>th</sup> Problem  $27x^6 - 8$  \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5<sup>th</sup> Problem  $c^4 + c$  \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6<sup>th</sup> Problem:  $a^3x^6 + a^3x^3y^3$  \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7<sup>th</sup> Problem  $x^6 - y^6$  \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Homework Section:

Section(s)	Page(s)	Problem(s)
8.5	290 → 291	1, 5, 9, 13, 21, 25
11.2	374 → 375	1,5,9,13,15,19,23,27,31