

I. Imaginary number (p.58):  $i = \sqrt{-1}$

II. Complex Numbers (p.59):

$$\mathbb{C} = \{a + bi \mid a \in \mathbb{R}, b \in \mathbb{R} \ \& \ i = \sqrt{-1}\}$$


*standard form*

III. Arithmetic:

1. Add & subtract, combine like terms ✓
2. Multiply, use FOIL method ✓
3. Divide, apply *conjugate* “ $a - bi$ ” ☆

IV. Examples (p.63): Exercises #~~26,30,36,40,48,58~~

HW: Read section 1.6 (pp.58-62)

pp.63-64 / Exercises #~~1-9(odd),15-39(every other odd),43-79(every other odd),81~~

# I. Quadratic Equation, 1-variable (p.65):

$$ax^2 + bx + c = 0$$

## II. Methods of solution –

1. Factoring (p.65):  $ab = 0 \Leftrightarrow a = 0 \text{ or } b = 0$

2. Square Root Property (p.66):

$$x^2 = k \Rightarrow x = \pm \sqrt{k}$$

3. Completing the Square (pp.68-69):

**Rarely used** (p.69 correction/step 1, coefficient of  $x^2$  not  $x$ )

4. Quadratic Formula (pp.69-70):

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

 ¡muy importante, también!

III. Examples (pp.76-77): Exercises #8,14,50,60,68

~~IV. Discriminant (p.71):~~

~~“ $b^2 - 4ac$ ” ← radicand in the quadratic formula  
that indicates type of roots/solutions~~

		roots/solutions are...
$b^2 - 4ac$	$> 0$ (positive)	two distinct real #'s
	$0$	one repeated real #
	$< 0$ (negative)	complex conjugates

~~V. Quadratic Regression (p.85): omitted~~

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HW: pp.76-78 / Exercises #5-23(odd),41-69(every other odd),77,709,87,93,95,103