Review of Chapter 1

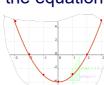
1.1 Graphing

1. Understand how word problems translate to algebraic equations.

The average yearly salary, w. Master's Degree is \$50,000 less than twice that of someone w. Bachelor's Degree. y = 2x - 50,000

2. Determine ordered pairs that are solutions of equations. y = 2 x - 5

3. Plot points of solution for an equation and sketch the graph of the equation.



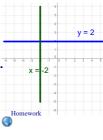
	X	У
$= x^2 - 4$	-3	+5
	-2	0
	-1	-3
	0	-4
	1	-3
	2	0
	3	+5



4. Equations for horizontal lines: y = k. For vertical lines: x = c

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-2 -9

Review of Chapter 1

1.2 Linear Equations & Rational Equations

- 1. Recognize equations as **linear** ax + b = 0. $a \ne 0$
- 2. Solve linear equations using the Addition Property of Equality and the Multiplication Property of Equality

$$2(x-1) + 3 = x - 3(x + 1)$$

3. Solve rational equations using the Multiplication Property of Equality

$$\frac{3}{y+3} = \frac{5}{2x+6} + \frac{1}{x-2}$$

4. Classify equations as **Conditional**, Identity: Inconsistent, or Identities

Conditional equation:

Inconsistent equation: all values of x

■ has a infinite number of solutions ie: true for

■ has a finite number of solutions

■ has no solution ■ solution is empty set

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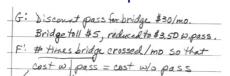
Review of Chapter 1

1.3 Models & Applications

1. Translate word problems to algebra.

One number exceeds another by 24. let x = one number The sum of the two numbers is 58. x + 24 = other number Find the numbers. x = 17 one number x + 24 = 41 other number

2. Solve word problems using a systematic



	# bridge crossings		
	w/o pass	withpass	
# y crossings	X	X	
monthly change	0	30	
cost of crossing	5X	3,50 X	

3. For equations with more than one variable, solve for one of the variables in terms of the other.

Used:

let x = one number x + 24 = other number only 1 variable: instead of
x= one number
y= other number
2 variables

have substituted x+24 for y

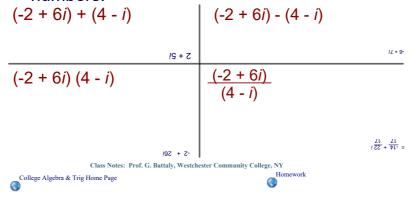


Review of Chapter 1 1.4 Complex Numbers GOALS:

1. Define complex numbers as those that include negative radicals.

Define: Complex Number eg: 3 +2i
a + bi where a is real & bi is imaginary

- 2. Define $i = \sqrt{-1}$ and $i^2 = -1$
- 3. Perform operation of addition, subtraction, multiplication and division with complex numbers.



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1.5 Quadratic Equations

GOALS:

Find Solutions to quadratic equations by:

- 1. using Zero Product Principle $x^2 + 5x + 6 = 0$ u = 0, v = 0 u = 0, v = 0u = 0, v = 0
- 2. using the Square Root Property $x^2 = 16$ $x = \pm \sqrt{16}$
- 3. Completing the Square

$$x^{2} + 6x + 5 = 0$$

$$x^{2} + 6x = -5$$

$$x^{2} + 6x + \underline{\qquad} = -5 + \underline{\qquad}$$

$$x^{2} + 6x + \underline{\qquad} = -5 + \underline{\qquad}$$

$$x^{2} + 6x + \underline{\qquad} = -5 + \underline{\qquad} = 4$$

$$(x + 3)^{2} = 4$$

4. applying the Quadratic Formula

$$2x^{2} - 4x - 1 = 0$$

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

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Homework

GOALS: 1.6 Other Equations

Find Solutions to Other Equations:

- I. Polynomial Equations, higher order factor (by grouping), try techn. for quadratics $5x^4 20x^2 = 0$
 - Z=x , Z- =x , 0=x

1 ∓ 1<u>e</u> 1 5

 $x = \pm 4$

II. Radical Equations

Simplify to the form $\sqrt{u} = v$ $\sqrt{20-8x} = x$ Square both sides $u = v^2$ Must check results

01- ≠x ,S=x

III. Equations in Quadratic Form

$$4x^4 = 13x^2 - 9$$

r± =x ,2/ε ± =x

IV. Equations with Absolute Value

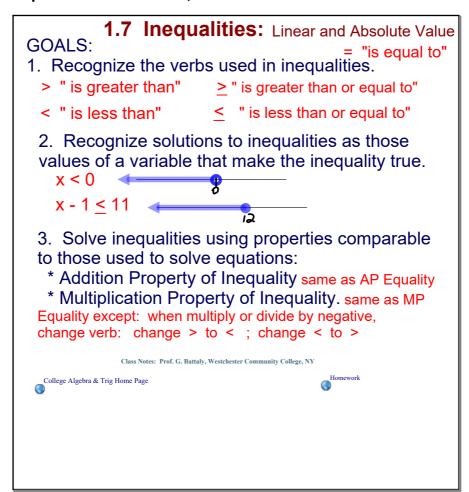
If
$$|u| = c$$
 $|x-2| = 9$
then $|u| = c$ or $|u| = -c$

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