

## Review Unit 1 - Quadratics

### PART #1

#### Sequences

- Linear
- Levels of Difference
- Quadratic Sequences

#### Quadratics

##### Graphing

- General Form
- Standard Form
- Transformational Form
- Mapping Notation
- Vertex (Completing the square)
  - Max/Min
  - Max/Min Applications
- Axis of Symmetry
- Range

### PART #2

#### Solving Quadratic Equations

- by: Factoring  
Completing the Square  
Quadratic Formula

#### Applied Word Problems

#### Nature of the Roots

#### Discriminant

#### Complex Numbers

$\sqrt{25}$   
 $\sqrt{25i^2}$   
 $+ 5$   
 $- 5$

$x \leq c$

## **PART 1 Review...**

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**We have already been tested on this material.  
Use your test/quizzes as review items.  
You should already have the review on this material.  
If not, go to the website - here is the link...**

## Quadratic Equations

### Finding Roots by...

Set equation equal to zero.  
Solve, by...

**FACTORING**  
(in general form)

Different kinds of Factoring:

- Greatest common factor
- Inspection
- Decomposition
- Special Factors

**ISOLATING**  
(in standard form)

Get into Standard Form, then  
isolate the variable.

**QUADRATIC FORMULA**  
(in general form, DNF)

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

"Roots", "X-intercepts", "Zeros", "Solve" ALL Mean the SAME THING

**Word Problems... equation will be given.**

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**(make note of inadmissible roots)**

**STRATEGIES:**

- identify what is being asked.
- solve the question.

**NOTE:**

- Max/min (vertex y coordinate)
- Sub for x (calculate)
- sub for y (solve)

## Applied Word Problems...

(make note of inadmissible roots)

<b>STRATEGIES:</b>	<ul style="list-style-type: none"><li>- declare variable(s).</li><li>- draw a sketch if needed</li><li>- build a quadratic equation.</li><li>- solve</li></ul>
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**Types:**

- equation already given
- find two numbers
- area
- speed/distance/time

## Nature of the Roots...

Value of the Discriminant			
$D = b^2 - 4ac$	Real or Non-real	Equal or Unequal	Rational or Irrational
1. $D > 0$ but not a perfect square	Real	Unequal	Irrational
2. $D > 0$ and is a perfect square	Real	Unequal	Rational
3. $D = 0$	Real	Equal	Rational
4. $D < 0$	Non-real	Unequal	n/a

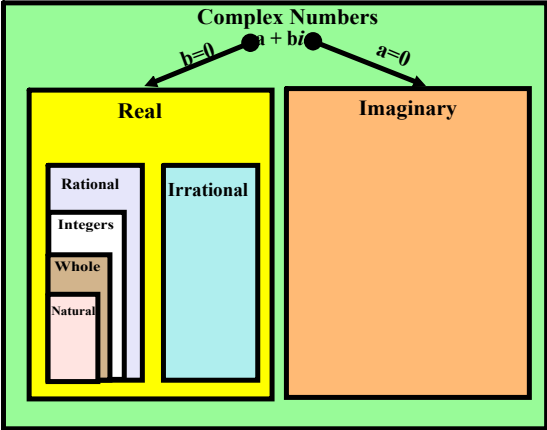
## Complex Roots...

Complex Numbers  $a + bi$

Know how to...

- simplify a radical
- write a complex root

$$i = \sqrt{-1}$$
$$i^2 = -1$$



## A Great Website for a Complete Review of Unit 1

[http://www.ed.gov.nl.ca/edu/sp/sh/math/math3204\\_3205/guide/math\\_guide3204.PDF](http://www.ed.gov.nl.ca/edu/sp/sh/math/math3204_3205/guide/math_guide3204.PDF)

### **Additional Resources...**

- In the text, read p. 63 - 71 for notes/examples.
- Practice Questions p. 72 - 74.  
(already have solutions from Test #1)
- Previous test/quizzes
- Extra practice on worksheets/text



REVIEW TIME!!!

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Review - Quadratics.doc

## Attachments

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Review - Quadratics.doc