Mathematics 11 Pre-Calculus WNCP

Textbook

This course uses the textbook "Pre-Calculus 11" ISBN -13: 978-0-07-073873-7
by McGraw-Hill Ryerson at 1-800-565-5758. Cost about $ 95.

Curriculum Outline

Chapter 1	Sequences and Series	Chapter 2	Trigonometry
Chapter 3	Quadratic Functions	Chapter 4	Quadratic Equations
Chapter 5	Radical Expressions and Equations	Chapter 6	Rational Expressions and Equations
Chapter 7	Absolute Value and Reciprocal Functions	Chapter 8	Systems of Equations
Chapter 9	Linear and Quadratic Inequalities		

Structure

This course is generally designed with the self-paced student in mind. It is based on a mastery system in which the student must obtain an 80% on the tests. Each chapter has two versions in which the student has a chance to reach and or exceed the 80% mastery level.

Evaluation

There are 9 chapter tests which account for 50% of the final mark. There are 4 cumulative tests which account for 40% of the final mark. Lastly there are 4 quizzes which account for 10% of the final mark.

Composition

This course is made up of:
9 Chapters Outlines, 4 Quizzes and 4 Quizzes Answer Keys
9 Chapter Tests each with an A and a B version (18 tests), Plus (18 tests) Answer Keys
4 Cumulative Tests, Plus (4 Cumulative Tests) Answer Keys,
All Answer Keys have a suggested marking scheme,
All files are put on a CD disk in pdf and MS Word,
A perpetual license for your school.
The entire paper course is placed in a binder along with the disk and shipped as one unit.

Cost: $ 450.00. See Ordering.

Mathematics 11 Pre-Calculus Record Chart

Name: **Commencement Date:**

	Chapter	Topic	Quiz	Test A	Test B	Average	Date
	1	Sequences and Series					
	2	Trigonometry					
	Cumulative Test						
	3	Quadratics					
	4	Quadratic Equations					
	Cumulative Test						
	5	Radicals					
	6	Rationals					
	7	Absolute Value					
	Cumulative Test						
	8	Systems of Equations					
	9	Inequalities					
	Cumulative Test						

Course Evaluation

Course Evaluation	Total Marks	Out of	Percent	Value	Result
Quizes (4)		85		10%	
Tests (9)		360		50%	
Cumulative Tests (4)		200		40%	
Final Mark					

Math 11 Pre-Calculus

Textbook: Pre-Calculus 11 by McGraw-Hill Ryerson

Chapter 3 Quadratic Functions

Goal: The goal of this chapter is to investigate the nature of quadratic functions/equations and how they can be applied to real-world situations.

Objectives: In order to achieve the above goal you will:

* Investigate quadratic functions in vertex form.
* Investigate quadratic functions in standard form.
* Investigate completing the square.

What Needs to be Done:

Chapter 3 has 3 sections: 3.1, 3.2, and 3.3. Each section in chapter 3 has an accompanied video to enhance your understanding of the section material. There may be more than one video for a section.
Use the section-numbered videos below as they correspond in the **Chapter Practice Guide** below to help you with your understanding.

Video Selections:

3.1 **https://www.youtube.com/watch?v=BMyV6j0EH3I**
Parabolas7of8 All parabolas have the same shape. (3:02 min).

3.1 **https://www.youtube.com/watch?v=eFZOnAcuVLM**
Graphing Parabolas w/ vertex & intercepts (15:00 min)

3.1 **https://www.youtube.com/watch?v=ZJDM4TE6I30**
How to Graph Parabolas (7:00 min)

3.1 **https://www.youtube.com/watch?v=vAPPYoBV2Ow**
Find the Equation of a Quadratic Function from a Graph (4:55 min)

3.2 **https://www.youtube.com/watch?v=Ev5eCg65WXg**
Properties of Quadratic Functions in Standard Form (11:39 min)

3.3 **https://www.youtube.com/watch?v=xGOQYTo9AKY**
Completing the Square - Solving Quadratic Equations (4:36 min)

3.3 **https://www.youtube.com/watch?v=TV5kDqiJ1Os**
Example 3: Completing the square | Quadratic equations (5:43 min)

3.3 **https://www.youtube.com/watch?v=LMApqDGjOr4**
Quadratic Equation Word Problems, part 1 070-25a (8:39 min)

Quadratic Functions

Chapter 3 Practice Guide

(Check Mark as You Complete)

✓	Page	Write out definitions for all new terms as you discover them.
	140-141	Read "Quadratic Functions" and then glance over "Career Link".
	142	Read over this page.
	143-144	**Watch video " Parabolas7of 8 All parabolas have the same shape." (3:03 min).** Use technology in "Investigate Graphs of Quadratic Functions in Vertex Form"
	144-145	Go over "Link the Ideas" and define the new terms. **Watch video " Graphing Parabolas w/ vertex & intercepts" (15:00 min) but just the first 7: 30 min.**
	146-147	Go over these two pages.
	148-150	Go over Example 1. **Watch video "How to Graph Parabolas" (7:00 min).**
	151-154	Go over Example 2. **Watch video " Find the Equation of a Quadratic Function from a Graph" (4:55 min).**
	154-156	Go over Example 3. Read over "Key Ideas".
	157-162	Under "Check Your Understanding" try # 1, 2ac, 3ac, 4ac, 5a, 6, 7ac, 8, 9, 10, 13, 14, 16, 18, 20, 22, and 24.
	163-164	Read P. 163 and define the new term on P. 164. **Watch video " Properties of Quadratic Functions in Standard Form " (11:39 min).**
	165-166	Read over "Link the Ideas". Note how to determine the x-coordinate.
	166-168	Go over Example 1.
	168- 172	Go over Examples 2-3.
	173	Read over "Key Ideas".

☐	174-179	Under "Check Your Understanding" try # 1, 2ab, 3, 4ac, 5bd, 6ac, 7, 9, 11, 12, 13, 15, 17, 20, 21, and 23.
☐	180	Read over. Watch video "
☐	183	Go over "Link the Ideas". Define the new term and write out the new formula. **Watch video "Completing the Square - Solving Quadratic Equations (5:43 min).**
☐	184-186	Go over Example 1.
☐	187-188	Go over Example 2.
☐	188-191	Go over Examples 3 and 4. **Watch video " Quadratic Equation Word Problems, part 1 070-25a" (8:38 min).**
☐	192	Read over "Key Ideas".
☐	192-197	Under "Check Your Understanding" try # 1, 2ac, 3ac, 4ac, 5bd, 6bd, 7ace, 8b, 9, 11, 12ac, 13, 14, 17, 19, 21, 23, 28 and 31.
☐	198-200	Under "Chapter Review" try # 1ac, 2a, 3ad, 4ad, 5a, 7, 9b, 11, 12, 14ac, and 17.
☐	201-203	Under "Chapter 3 Practice Test" try # 1-6, 7b, 9a, 10, 13, and 15.

Since this course is based on the mastery system, you need to reach 80% in the test before you can proceed to the next chapter, so review your problems and when you are ready, ask your instructor for the test.

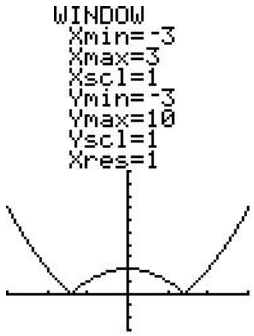
Test Sample Pages

Since this course is based on the mastery system, you need to reach 80% in the test before you can proceed to the next chapter, so review your problems.

1. Sketch the graph of the following absolute value function and state the intercepts, domain, and range.
   $y = | x + 6 |$

3

2. Identify the piecewise function to be used to represent the graph of the following absolute value function. $k(x) = | x^2 - 2 |$

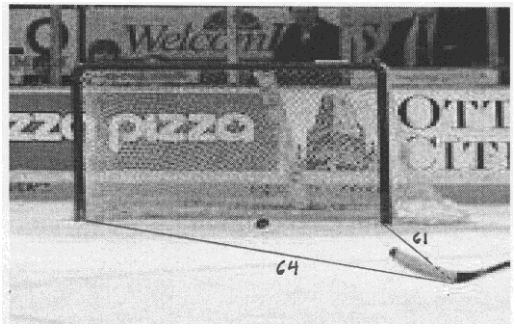


2

3. Consider the function $k(x) = | x^2 - 2x - 16 |$.
   (a) Sketch the function.
   (b) Name the x and y intercepts of the graph of the function.
   (c) Name the domain and range of k(x).
   (d) Express the function as a piecewise function.

5

9. A player shoots a puck toward the 6 foot wide NHL regulation net from a point 61 feet from one goal post and 64 feet from the other. Within what angle, to the nearest tenth of a degree, must he shoot to hit the net?



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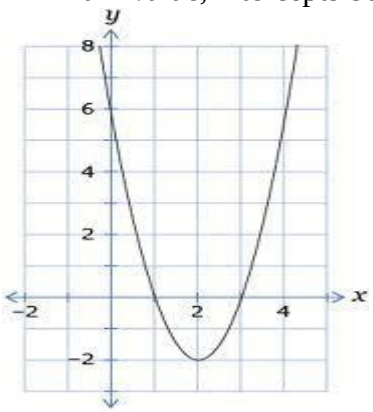
10. In triangle ABC, a = 10, b = 12, and c = 18. Find the value of all three angles to their tenth place value.

1. Determine a quadratic function in vertex form that has the given characteristics: the vertex is at (2, 6) and passes through the point (5, -12).

3

2. Identify the vertex coordinates, axis of symmetry, direction of opening, maximum or minimum value, intercepts both x and y, domain, and range.



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3. Sketch using technology the following function. Determine the vertex, the axis of symmetry, direction of opening, maximum or minimum value, domain, and range and any intercepts.
$b(x) = x^2 + 6x$

1. Simplify and state any non-permissible values.

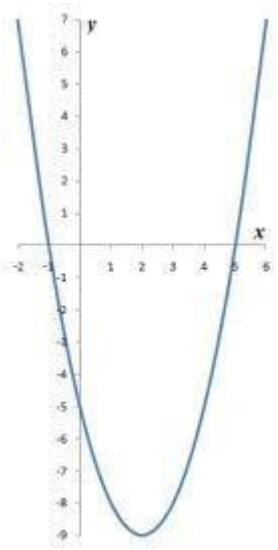
$$\frac{(2a - 1)(a^2 - a - 12)}{(a + 3)(2a^2 - 3a + 1)} - \frac{(a - 2)}{(a + 3)}$$

2. A mountain bike specialist rode the first 29 km portion at a constant speed but for the remaining 12 km the speed was reduced by 3 km/ hr due elevated and rough terrain. Write a rational expression for the total time of the race. Then simplify the total time.

1. Determine a quadratic function in vertex form that has the given characteristics: the vertex is at (-4, -8) and passes through the point (-1, 4).

3

2. Identify the vertex coordinates, axis of symmetry, direction of opening, maximum or minimum value, intercepts both x and y, domain, and range.



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