

Rationale:

Foundations and Pre-Calculus Mathematics 10 is an academic course which will prepare you for either Foundations of Mathematics 11 or Pre-Calculus Mathematics 11.

Material Covered:

The course is comprised of the following 7 Units:

- Financial Literacy
- Experimental Probability
- Trigonometry
- Factors and Products
- Roots and Powers
- Relations and Functions
- Linear Functions
- Systems of Linear Equation

Textbook:

The course uses the texts *Foundations and Pre-Calculus Math 10*. (ISBN-13: 9780321707345, Pearson)

Mathematics for Apprenticeship and Workplace 10. (ISBN 978-0-17-650271-3, Nelson)

Notebook:

Your notebook should be neatly organized, as this will help you study for tests. Label the unit and topic headings clearly at the top of the page. Answer questions fully, so that the information makes sense and can be used later for studying. Show which textbook and which page number the information comes from so you can look it up again easily.

Grading:

This course works on a mastery system. You must pass the mastery tests in each unit to the 80% level before you can go on. In addition, there are cumulative tests from time to time. These are tests you can only take once, so studying before them is essential to do well. Your final class mark for the course is based 60% on the mastery unit tests and 40% on the cumulative tests.

Goal:

The goal of this unit is learn of the ways income is earned and to calculate the ways income is paid.

Objectives:

By the end of this unit you should be able to:

- Identify ways of earning income
- Calculate hourly wages, including overtime
- Calculate commission income
- Calculate piecework income
- Calculate net income

What to Do in this Unit:

This Unit uses Chapter 1 in the *Mathematics for Apprenticeship and Workplace 10* workbook.

Read and follow the example problems at the beginning of each section, then do the practice problems listed for each section in the table below. Be sure to tick off each section as you complete it.

Chapter 1 - Mathematics for Apprenticeship & Workplace		
	Getting Started	All questions
	1.1	All questions
	1.2	All questions
	1.3	All questions
	1.4	All questions
	Mid-Chapter Review	All questions
	1.5	Omit!
	1.6	All questions
	1.7	All questions
	1.8	All questions
	1.9	Omit!
	Chapter Review	All questions

When you are ready ask your teacher for the Unit 1 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to increase your skills with probability.

Objectives:

By the end of this unit you should be able to:

- Express probabilities
- Make predictions
- Compare probability and odds
- Calculate theoretical and experimental probability
- Find expected values

What to Do in this Unit:

- This Unit doesn't use either textbook.
- Ask your teacher for the Unit 2 Worksheet and do all the practice problems there.
- When you are ready ask your teacher for the Unit 2 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to familiarize you with the primary trigonometric units (sin, cos and tan), and to learn how to solve problems that involve right angle triangles.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- The definitions of the primary trigonometric ratios (SOH CAH TOA).
- Identifying the hypotenuse, opposite and adjacent sides for a particular angle in a right triangle.
- Solving problems involving the trigonometric ratios or Pythagoras theorem ($c^2=a^2+b^2$).
- Solving problems involving more than one right triangle.

What to Do in this Unit:

Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math 10 Foundations & Pre-Calculus		
✓	Unit	Practice by doing these questions
	2.1	p.75 #3-6, 8, 10, 13, 15, 18, 20
	2.2	p.82 #3-7, 9, 10, 11, 13, 15
	2.4	p.95 #4-8, 11, 13, 16
	2.5	p.101 #3-6, 9, 10, 11
	2.6	p.111 #3-6, 8, 11, 15
	2.7	p.119 #3-6, 9, 13, 14, 19
	Review	p.124 #1, 3, 5, 8, 11, 13, 15, 17, 18, 19, 23

- When you are ready, ask your teacher for the Unit 3 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.
- Go over your work from Units 1, 2, and 3 in preparation for Cumulative Test #1. When you are ready to write it, ask your teacher. Remember, this test is one chance only, so do your best.

Goal:

The goal of this unit is to familiarize you with determining the factors of whole numbers as well as multiplying and factoring polynomials

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Factors and multiples of whole numbers including perfect squares and cubes.
- The four methods of factoring polynomials which are: common factoring, factoring polynomials of the form x^2+bx+c , factoring polynomials of the form ax^2+bx+c , and differences of squares.
- Multiplying polynomials.

What to Do in this Unit:

Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math 10 Foundations & Pre-Calculus		
✓	Unit	Practice by doing these questions
	3.1	p. 140 #3-6, 8, 10, 13, 15, 17
	3.2	p. 146 #4, 5, 7, 8, 10, 16
	3.3	p. 155 #5-10, 14, 16
	3.5	p. 166 #5, 7, 9, 11, 14, 21
	3.6	p. 177 #9, 12, 13, 15, 18, 19
	3.7	p. 186 #4, 5, 8, 9, 15, 17
	3.8	p. 194 #4, 6, 8, 10, 12, 13, 18
	Review	p. 198 #1, 5, 8, 12, 13, 18, 19, 25, 28, 32, 33, 35

- When you are ready, ask your teacher for the Unit 4 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to familiarize you with irrational numbers, radical numbers and the laws of exponents.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- The definition of an irrational number and how to recognize one.
- Simplifying radical numbers.
- The exponent laws.

What to Do in this Unit:

Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math 10 Foundations & Pre-Calculus		
✓	Unit	Practice by doing these questions
	4.1	p. 206 #3
	4.2	P. 211 #3, 4, 10, 12, 16, 17, 18
	4.3	p. 218 #4, 5, 10, 11, 14, 15, 20
	4.4	p. 227 #3, 5, 6, 8, 9, 12, 17, 19, 21
	4.5	p. 233 #3, 6, 7, 8, 15
	4.6	p. 241 #3, 5, 6, 8, 10, 12, 13, 16, 21
	Review	p. 246 # 3, 6, 9, 11, 12, 17, 18, 22, 24, 27, 28, 29

- When you are ready, ask your teacher for the Unit 5 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.
- Go over your work from Units 4 and 5 in preparation for Cumulative Test #2. When you are ready to write it, ask your teacher. Remember, this test is one chance only, so do your best.

Goal:

The goal of this unit is to familiarize you with relations and functions with a focus on linear relations and graphing.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Representing relations in different ways including ordered pairs, tables, arrow diagrams and bar graphs.
- The definition of a function and how to determine if a given relation is a function.
- Graphing functions and relations and determining range and domain.
- The properties and graphs of linear functions.

What to Do in this Unit:

Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math 10 Foundations & Pre-Calculus		
✓	Unit	Practice by doing these questions
	5.1	p. 262 #3, 4, 9
	5.2	p. 270 #3-8, 12, 14, 15, 18, 19, 21
	5.3	p. 281 #4, 7, 10, 14, 18
	5.5	p. 294 #4, 6, 7, 9, 12, 13, 16, 17
	5.6	p. 308 #3-5, 7, 8, 12, 13, 17, 18
	5.7	p. 319 #4-8, 10, 12, 17, 18
	Review	p. 326 #1, 2, 3, 4, 6, 9, 11, 13, 15, 17

- When you are ready, ask your teacher for the Unit 6 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to familiarize you with linear functions including both algebraic and graphical forms.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Determining the slope of a given line or function.
- Understanding the relationship between parallel and perpendicular lines.
- Representing the equation of a linear function in slope-intercept form, slope-point form and general form and using algebra to convert between these three forms.

What to Do in this Unit:

Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math 10 Foundations & Pre-Calculus		
✓	Unit	Practice by doing these questions
	6.1	p. 339 #4-6, 9, 11, 13, 16, 18, 22, 25, 26
	6.2	p. 349 #3-6, 9, 10, 13, 16, 22
	6.4	p. 362 #4-6, 8, 9, 12, 14, 15, 17, 18, 21, 22
	6.5	p. 372 #4-6, 9, 10, 11, 12, 17, 19, 20, 23, 24
	6.6	p. 384 #4-7, 9, 10, 12, 13, 18, 21, 24, 26
	Review	p. 388 #1, 4, 7, 8, 11, 13, 14, 17, 19, 21, 25, 28

- When you are ready, ask your teacher for the Unit 7 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to familiarize you with creating and solving systems of linear equations.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Developing systems of linear equations that fit the information provided.
- Solving systems of linear equations graphically.
- Solving systems of linear equations algebraically using the substitution method and the elimination method.
- Understanding some properties of systems of linear equations.

What to Do in this Unit:

Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math 10 Foundations & Pre-Calculus		
✓	Unit	Practice by doing these questions
	7.1	p. 401 #4-8, 10, 12, 16
	7.2	p. 409 #3-8, 10-13, 15, 19
	7.4	p. 425 #4-7, 10, 12-16, 19, 24, 25
	7.5	p. 437 #3-11, 13, 14, 16, 17, 18, 22
	7.6	p. 448 #4-11, 14, 16, 18, 22, 24
	Review	p. 452 #1, 3, 7, 10, 13, 15, 17, 20

- When you are ready, ask your teacher for the Unit 8 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.
- Go over your work from Units 6, 7, and 8 in preparation for Cumulative Test #3. When you are ready to write it, ask your teacher. Remember, this test is one chance only, so do your best.

- **Congratulations! You've finished Math 10 F&PC!**