**Middlesex Community College**

**Guided Self-Placement**

**Math**

Page

**Section 1 Multiple Measures** **2**

**Section 2 General Questions 4**

**Section 3 Math Evaluation 5**

**Section 4 Self-Placement 14**

**Middlesex Community College**

**Placement Center**

**placement@middlesex.mass.edu**

**Student Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Student A number:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Have you taken a Math course at Middlesex Community College?**

\_\_\_ **Yes You are eligible to register online or meet with an advisor by calling**

 **1-800-818-3434 to set up an appointment.**

\_\_\_  **No Proceed to Section 1**

**Section 1: Math Placement – Multiple Measures**

1. **At MCC, we use multiple measures for course placement. Students can be placed into college-level coursework based on High School GPA, SAT, ACT, or previous college work for Math Placement.**
2. **Do you have an overall US High School GPA of 2.7 or higher within the last three years?**

\_\_\_Yes

\_\_\_ No

If yes, send HS transcripts to admissions@middlesex.mass.edu

1. **Do you have an ACT score of 22 or higher within the last three years?**

\_\_\_Yes

\_\_\_ No

If yes, send official ACT score reports to placement@middlesex.mass.edu

1. **Do you have an SAT score of 600 or higher in mathematics within the last three years?**

\_\_\_Yes

\_\_\_ No

If yes, send official SAT reports to placement@middlesex.mass.edu

1. **Do you have college level Math credits from another institution?**

\_\_\_Yes

\_\_\_ No

If yes, request an official transcript and send to registrar@middlesex.mass.edu

1. **Do you have AP, CLEP or other evidence of prior learning credits in Math?**

\_\_\_Yes

 \_\_\_ No

If yes, submit official scores to registrar@middlesex.mass.edu

1. **Have you taken the Math Accuplacer at another institution?**

\_\_\_Yes

\_\_\_ No

If yes, submit official scores to placement@middlesex.mass.edu

**If you answered NO to all questions, please proceed to Section 2 – General Questions to begin the Math Self-Placement process.**

**Section 2: General Questions**

1. What were your experiences in previous math courses that you took?
2. How comfortable are you with learning new math concepts and solving problems?

\_\_\_\_\_ I feel comfortable with mathematics

\_\_\_\_\_ I feel somewhat comfortable with mathematics

\_\_\_\_\_ I am not comfortable with mathematics

1. What is last mathematics class you took? How many years ago was this class?
2. What is the highest level of mathematics that you took?
3. What major or certificate program are you enrolled in at this time?

**Next, continue to Section 3 – Math Evaluation**

**Section 3 Math-Evaluation**

Please review the mathematics courses and descriptions on the following pages.

In the column entitled problems, **these are problems you should ALREADY know when entering the course.** Instructors will not be teaching these types of problems and will expect students in their classes to already have a background in solving these problems.

Upon completion of the problems, proceed to page 11 to see how many problems you answered correctly.

|  |  |  |
| --- | --- | --- |
| **COURSE** | **Description** | **Problems** |
| MAT120Math for Liberal Arts | Topics will be drawn from areas such as: collecting, describing and analyzing data; probability and decision-making; loans and investments; population growth; linear programming; and geometry of measurement.Course uses group work/projects and focuses on real-life applications of concepts.  | 1. Change the following into a percentage.

$\frac{3}{14}$ 1. Change the percentage to a fraction in lowest terms 74%
2. Change the percentage to a decimal 52%
3. Determine the value of the expression when x=7 $3\sqrt{(10-x)^{2}}$
4. Solve for x

$$2\left(x-7\right)=5\left(x+3\right)-x$$1. Solve $4-\left(3+7\right)+15÷5-2$
2. $\frac{7.8}{13}=\frac{n}{2.6}$ solve for n
 |
| MAT130Elements of Mathematics I | This course provides a comprehensive, conceptually based study of the mathematics of the real number system. Topics studied include patterns and problem solving, algorithms for arithmetic operations, numeration systems, number theory, and computations with whole numbers, integers, decimals and percentages. Inquiry-based instruction, problem-solving strategies and project work are emphasized.This course is for students in the early education or elementary education program. Topics are taught to deepened students’ knowledge of the concepts for teaching. | 1. Find the x- and y-intercepts.

$$4x-8y=16$$1. Write an equation of the line through $(-2, 3)$ and parallel to $5x-2y=8$
2. Solve for x

$$2\left(x-7\right)=5\left(x+3\right)-x$$1. Solve the system

$$3x-4y=21$$$$2x+5y=-9$$1. Solve for x

$$17\leq 3x-5<31$$1. Solve by factoring

$$x^{2}+3x-10=0$$1. Name the property

3(x+4)= 12+3x4+5+10= 10+4+51. The perimeter of a rectangle is 44 ft. The length is 2 feet less than 3 times the width. Find the length.
 |
| MAT131Elements of Mathematics II | This course provides a comprehensive, conceptually based study of plane and solid geometry, and probability and statistics. Topics include concepts of measurement, motion geometry, models of empirical and theoretical probability, and data analysis. Inquiry-based instruction, problem-solving skills, project work and the appropriate use of technology, including calculators and computers, are emphasized.This course is for students in the early education or elementary education program. Topics are taught to deepened students’ knowledge of the concepts for teaching | 1. Find the x- and y-intercepts.

$$4x-8y=16$$1. Write an equation of the line through $(-2, 3)$ and parallel to $ 5x-2y=8$
2. Solve for x

$$2\left(x-7\right)=5\left(x+3\right)-x$$1. Solve the system

$$3x-4y=21$$$$2x+5y=-9$$1. Solve for x

$$17\leq 3x-5<31$$1. Solve by factoring

$$x^{2}+3x-10=0$$1. Name the property

3(x+4)= 12+3x4+5+10= 10+4+51. The perimeter of a rectangle is 44 ft. The length is 2 feet less than 3 times the width. Find the length.
 |
| MAT165Trigonometry for Engineering and Science | Topics include a study of unit circle and right-triangle trigonometry, trigonometric functions and their graphs, inverse circular functions, trigonometric identities, trigonometric equations and inequalities, vectors, and the Law of Sines and Cosines. Application and word problems will be emphasized. Additional topics such as polar coordinates and parametric equations may be included. | 1. Write the expression in logarithmic form. $$16^{\frac{3}{4}}=8$$1. Determine the domain of the following function$$\frac{3x-5}{2x^{2}-11x-21}$$
2. Write the following in exponential form

$$log\_{2}32=5$$1. Determine
 |
| MAT177Statistics | A general statistics course, which includes understanding data, measures of central tendency, measures of variation, binomial distributions, normal distributions, correlation and regression probability and sampling distributions, Central Limit Theorem, confidence intervals, estimates of population parameters and hypotheses testing. Interpretation and data analysis are emphasized. | 1. 1.2% of 13=
2. 23 is what percent of 50?
3. 14 is what percent of 61?
4. 22 out of 30 students passed the test. Find the proportion of students who failed the test.
5. $\frac{6-9}{\frac{3}{\sqrt{4} }}$ =
6. $\frac{6+1}{\frac{13}{3 }}$
7. -2 -32 =
8. Change the following from scientific notation

1.3542E-4 = 5.627E4 = 1. Find the equations of the

A line passing through the two points (-1, 3) and (2, 6) 1. What is the slope of the line

2x - 3y = 5 |
| MAT182Precalculus for Business and Social Science | Topics in preparation for Calculus for Business including the study of polynomial, rational, exponential and logarithmic functions. Applications will draw from the fields of business and social science, including revenue/cost, matrices and linear programming. | 1. Find the x- and y-intercepts.

$$4x-8y=16$$1. Write an equation of the line through $(-2, 3)$ and parallel to $5x-2y=8$
2. Solve for x

$$2\left(x-7\right)=5\left(x+3\right)-x$$1. Solve the system

$$3x-4y=21$$$$2x+5y=-9$$1. Solve for x

$$17\leq 3x-5<31$$1. Solve by factoring

$$x^{2}+3x-10=0$$ |
| MAT195Precalculus for Engineering and Science | Topics in preparation for Calculus for Science including the study of polynomial, rational, exponential and logarithmic functions and circles. Applications will draw from the physical and natural sciences. | 1. Find the x- and y-intercepts.

$$4x-8y=16$$1. Write an equation of the line through $(-2, 3)$ and parallel to $5x-2y=8$
2. Solve for x

$$2\left(x-7\right)=5\left(x+3\right)-x$$1. Solve the system

$$3x-4y=21$$$$2x+5y=-9$$1. Solve for x

$$17\leq 3x-5<31$$1. Solve by factoring

$$x^{2}+3x-10=0$$1. Solve the above quadratic using the quadratic formula
2. $\sqrt[3]{x^{2}}$ rewrite with rational exponent
3. Rewrite with positive exponents $\frac{x^{-3}y^{2}}{x^{7}y^{-2}}$
4. Need to be able to graph functions and solve using the graphing calculator (TI83/84)

(negative and rational exponents) |
| Module 80/70(Register for MAT 001) | Students placing into the 80’s or 70’s modules should be able to* Identify and plot points on the coordinate plane
* Identify the quadrants of the coordinate plane
* Find the slope of a line that passes through two given points
* Graph the line of a linear equation in two variables using a table of values, intercepts, and slope and *y*-intercept
* Determine if two given lines are parallel or perpendicular
* Write a given linear equation in general form and in slope-intercept form
* Identify the slope and *y*-intercept of an equation written in slope-intercept form
* Find the equation of a line given two points on the line or its slope and one point
* Graph a linear inequality in two variables
* Solve applied problems involving graphs of linear equations and inequalities in two variables
 | 1. Simplify$-6\left(\frac{1}{2}x-1\right)-\left(5-3x\right)$
2. The perimeter of a rectangle is 44 ft. The length is 2 feet less than 3 times the width. Find the length.
3. Determine the slope and y-intercept of the linear equation: 3x – 5y = 15
4. $Solve for x $

$$ 2x+20\leq 3x+13$$1. $solve for x$

$$ 0.35x+0.09\left(x+4\right)=0.03(12)$$1. $\frac{7.8}{13}=\frac{n}{2.6}$ solve for n
 |
| Mod 5 Placement(Register for MAT 001) | Students Placing into this module should be able to* Compare signed numbers
* Find the absolute value of a number
* Perform addition, subtraction, multiplication and division with signed numbers
* Solve applied problems involving signed numbers
 | THESE MUST BE COMPLETED WITHOUT A CALCULATOR1. $32.1-19.67=$
2. $19-\frac{\left(-2-8\right)^{2}}{\left(7\*2+6\right)}-\left(-11\right)=$
3. $\frac{2}{3}+\frac{1}{5}$=
4. Round to the nearest hundredth: 8523.6592
 |

**Answer Sheet to Problems**

Next review your answers to the problems against the correct solutions provided below.

* **If you solved all the problems for a course correctly,** we recommend you take the listed math course or start at the correct module.
* **If you did not solve all the problems correctly for a course or module**, please proceed to page 15 for other recommended courses.

**SOLUTIONS TO PROBLEMS**

**MAT120**

1. 21.43%
2. 
3. 0.52
4. 9
5. 
6. -5
7. n= 1.56

**MAT130/131**

1. y-int (0,-2) x-int (4,0)
2. 
3. 
4. (3,-3)
5. 
6. x=2 x=-5
7. Distributive

Commutative

1. W=8 L=14

**MAT165**

1. 
2. All real numbers except x=7 and x=-3/2
3. 25=32
4. 

**MAT177**

1. 0.156
2. 46%
3. 23%
4. 
5. 2
6. 
7. -11
8. 0.00013542

56270

1. 
2. 

**MAT182**

1. y-int (0,-2) x-int (4,0)
2. 
3. 
4. (3,-3)
5. 
6. x=2 x=-5

**MAT195**

1. y-int (0,-2) x-int (4,0)
2. 
3. 
4. (3,-3)
5. 
6. x=2 x=-5
7. x=2 x=-5
8. 
9. 

**MODULE 70/80**

1. 1
2. L=14 W=8
3. (0,-3) y-intercept slope= 3/5
4. 
5. x=0
6. n=1.56

**MODULE 5**

1. 12.43
2. 25
3. 13/15
4. 8523.66

**Other Recommended Courses and Options (MAT 007, MAT 008, MAT 001)**

1. If you answered most of the problems correctly for a course and you feel comfortable with math and have taken recent math courses, we recommend you consider taking a college level Math course in combination with a skills development course. This combination will allow you to take the Math course you desire while receiving some extra assistance.

**MAT 007 can be taken with MAT 177 or MAT 120**

**MAT 007 - Skills Development *1***

**Course Description:** This course provides opportunities for students to develop mathematical skills that will help them succeed in MAT 120 or MAT 177. This course is taken concurrently with either course (MAT 120, MAT 177). This course is for NON-STEM majors whose placement scores indicate placement into MAT 001 (Mod=999 – eligible for Module 70 or 80) or MAT 080 but would like to earn degree credit for MAT 120 – Math for Liberal Arts of MAT 177- Statistics. By registering for this course, the student will also be registered in a linked MAT 120 or MAT 177 taught by same instructor. MAT 007 is non-degree credit course and is not transferrable.

**Prerequisite(s):** CPT Reading placement test score of 68 or above and placement into MAT 001 ( Mod 8 = 999-eligible for Module 70 or 80 ) or MAT 080.
**Note(s):** This course is NOT for students who need Modules 80-85 in Preparation for College Math (RAMP UP) sequence. It is NOT intended for Elementary Education and Early Childhood Majors, Business Transfer Majors, or STEM majors.

Note: A student must earn a grade of C or better in this course as well as pass MAT 120 or MAT 177 to receive three degree credits for MAT 120 or MAT 177.

**MAT 008 can be taken with MAT 195**

**MAT 008 - Skills Development for Precalculus *3***

**Course Description:**This course provides an opportunity for students to develop mathematical skills needed to succeed in MAT195. By registering for this course, the student will also be registered in a linked MAT195 course taught by the same instructor. MAT 008 is a non-degree credit course and is not transferable.
**Prerequisite(s):** Placement into module 80

Notes(s): This course is a co-requisite option for students who test into developmental coursework. By taking this course with MAT 195 students can move directly into MAT 165 upon successful completion.

1. If you did not answer several of the problems correctly for a course and you do not feel comfortable with math or have not taken recent math courses, we recommend you take MAT 001 (Preparation for College Level Math). This will allow you to build and practice the math skills necessary for college level work.

**MAT 001 - Preparation for College Math *3***

**Course Description:** A modularized approach to topics that prepare students for college level mathematics courses. The topics are divided into the following eighteen modules: Module 1: Whole Numbers, Module 2, Fractions, Module 3: Decimals, Module, Module 4: Integers and Introduction to Real Numbers, Module 5: Algebraic Expressions and Translations, Module 6: Solving Linear Equations and Inequalities, Module 7: Ration, Proportion, and Percent, Module 8: Graphing Linear Equations and Inequalities in two variables, Module 70: Percentages, Absolute and Relative differences and Applications, Module 71: Graphing Calculator skills, Module 72: Algebraic Skills, Module 73: More on Graphing and Line of Best Fit. Module 80: Systems of Linear Equations in two and three variables, Module 81: Exponents and Polynomials, Module 82: Factoring Polynomials, Module 83: Rational Expressions and Equations, Module 84: Rational Exponents and Radicals, Module 85: Inequalities and Quadratic Equations. Students will be placed into the appropriate module for their math preparation and discipline.

Students testing into Algebra 2 or Intermediate Algebra will be placed into one of two tracks depending on their intended pathway.  Track one contains modules 70 through 73 and is intended for Non-STEM, Non-Business majors.  Track two contains modules 80 through 85 is intended for Business Transfer and STEM majors.

A student needing to master any topics in these Modules will be placed into MAT 001.

Students can complete as many modules as they are able but must complete a minimum of 4 modules to earn a passing grade in this course. 3 hours classroom/1 hour lab. Students enroll in MAT001, 002,003 or 004.

**Next, continue to Self-Placement on the following page.**

1. **Self Placement**

**Please write down what Math course in which you would place yourself. Write down the reasons you feel this is the best Math course for you. Bring this information with you when you meet to discuss your placement.**

**NEXT STEPS**

* **If you are unsure of your Math placement**, email ACE@middlesex.mass.edu to request an appointment for a “Make the Right Choice Session”. Make the Right Choice Sessions are designed to provide a refresher in math skills, receive feedback on your understanding, help you make an informed decision based on your skills and motivation, and learn about student support services.
* **If you are comfortable with your Math self-placement,** complete the Math Self-Placement form. This form will be sent to the Testing Center and your placements will be recorded. Please also save a copy of this form and bring with you to your registration session. Once you have completed this form you are ready to register for classes. Call 1-800-818-3434 or e-mail middlesex@middlesex.mass.edu to register for a new student registration session.