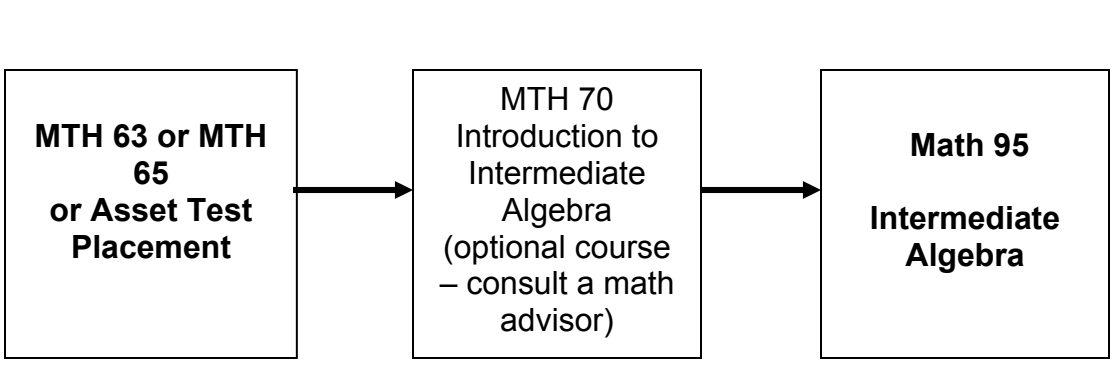
Portland Community College

MATH 70

Introduction to Intermediate Algebra



ARE YOU PREPARED?

- ✓ This mini quiz is meant to serve only as an indicator of a few of the math skills that you are expected to know at the beginning of this course. Do not use these problems as a study guide thinking that they will adequately prepare you for the course.
- ✓ These example problems are merely representative of some of the most important concepts that are taught in the prerequisite courses.
- ✓ The course will offer little or no time for any type of review; it assumes that you are prepared to do the work the first day of class.

Below are some of the major topics that are covered in MATH 70:

1. Solving equations
   - A. Linear equations
   - B. Quadratic equations
   - C. Rational equations
   - D. Radical equations

2. Graphing
   - A. Linear functions
   - B. Quadratic functions

3. Simplifying expressions
   - A. Polynomial expressions
   - B. Rational expressions

4. Function concepts
   - A. Domain
   - B. Range
   - C. Function notation
   - D. Graph reading

Below are some of the topics that are covered in MATH 70

Part I

Work with positive and negative real numbers, fractions, and the order of operations.

a) $100 \div 4 \times 5$

b) $\dfrac{(-3)(-4)-3^2}{-4+6}$

c) $\dfrac{2}{3} \div \left(\dfrac{1}{3}+\dfrac{3}{8}\right)$

Part II

1. Simplify expressions:
   a) $3(2x^2-3xy+y)-(y-x^2+2xy)$
   b) $12-2(x-2)$
   c) $\left(\dfrac{27x^{-2}y^5}{9x^6y^2}\right)^3$

2. Factor:
   a) $x^2-5x-14$
   b) $6a^2b^3-3a^2b$

3. Solve for x:
   a) $3x-(x+4)-5=5(x-4)-4$
   b) $3x-5y+6=0$
   c) $x^2-5x-14=0$

4. Evaluate expressions:
   If $x=-3$, evaluate $-x^2-2x-1$

5. Graph by HAND and on your GRAPHING CALCULATOR*
   a) $4x+3y=-12$
   b) $y=6x^2+90x-600$

6. Find the equation of the line passing through 2 given points:
   $(2,-1)$ $(-1,-7)$

7. Solve a first-degree inequality in one variable:
   Given: $8-5x \geq 3x+9,$ solve for x

8. Given $f(x)=-3x+2$
   a) Evaluate $f(-2)$
   b) Solve for x if $f(x)=-2$

ANSWERS

Part I a) 125 b) $\frac{3}{2}$ c) $\frac{16}{17}$

Part II

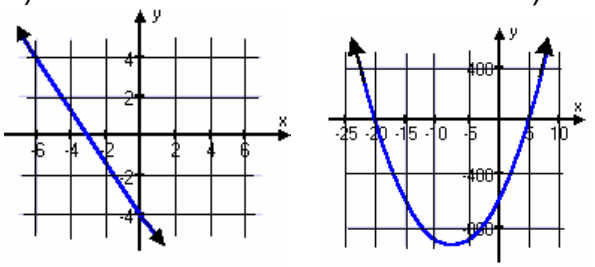
1. a) $7x^2 - 11xy + 2y$ b) $16 - 2x$ c) $\frac{27y^9}{x^{24}}$

2. a) $(x-7)(x+2)$ b) $3a^2b(2b^2-1)$

3. a) $x = 5$ b) $x = \frac{5y-6}{3}$ c) $x = 7,\ x = -2$

4. -4

5. a) b)



6. $y = 2x - 5$ 7. $x \le -\frac{1}{8}$ or $-\frac{1}{8} \ge x$

8. a) $f(-2) = 8$ b) $x = \frac{4}{3}$

***Students with no graphing calculator experience should enroll concurrently in MATH 93.**

MATH 70 IS AN OPTIONAL COURSE
CONSULT A MATH ADVISOR

How many of these problems can you miss and still succeed in MATH 70?

a) If you missed any of the problems in Part I you should consider enrolling in MTH 60.

b) If you missed several of the problems in Part II, MTH 70 is the course for you. These topics will be reviewed in MTH 70.

c) If you missed none of the problems, enroll in MTH 95.