HOMEWORK 2 - MATH 102 DUE DATE: Tuesday, September 18 INSTRUCTOR: George Voutsadakis

Read each problem **very carefully** before starting to solve it. Four out of the eight problems will be chosen at random and graded. Each problem graded is worth 3 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points.

GOOD LUCK!!

- 1. Solve the following equations:
 - (a) 8(x+1) + 7x + 2 = 5(x-2) + 2x 1

(b)
$$x - (3 - 2x) = 5(x - 1) - 7$$

2. Use the CRAM procedure to solve the equations:

(a)
$$\frac{x}{10} - \frac{x}{6} = \frac{4}{3}$$

(b) $\frac{2x+1}{2} - \frac{3x+5}{4} = 1$

3. Solve the given formula for the indicated letter:

(a)
$$V = \frac{1}{3}\pi r^2 h$$
 for h

- (b) 7x 4y = 13 for y.
- 4. The area A of a trapezoid with bases a and b and height h is given by $A = \frac{1}{2}h(a+b)$.
 - (a) Solve for h.
 - (b) If the Area is 60 square units, its height is 10 units and its base a is 7 units, what is the length of its base b?
- 5. In the following problems, write the given statement as an equation and then solve it.
 - (a) If 4 times a number is increased by 7, the result is 31. Find the number.
 - (b) If 6 is subtracted from a third of a number, the result is one less than twice the number. Find the number.
- 6. The sum of three consecutive integers is -39. Find the integers.
- 7. Two sums of money totaling \$12,000 earn, respectively, 2% and 8% annual interest. If the interest from both investments amounts to \$840, how much is invested at each rate?
- 8. A freight train leaves the station traveling at 20 mi/hr. One hour later, a passenger train leaves the station on a parallel track traveling st 60 mi/hr. How far from the station does the passenger train overtake the freight train?