

Math 1010 January 27, 2017

Homework 8

Text problems to do: 2.1 # 5-37 odds;

2.2 # 7, 11, 15, 19, 41

Solve the following equations for  $x$ . Show work on this paper. Do it yourself.

1)  $x + 8 = 30$

2)  $2x - 6 = 13$

3)  $x + 7 = 7x - 20$

4)  $2x + 7 = 14 - 8x$

5)  $3x + 7 = 5(2 - 4x)$

6)  $3.12x - 7.81 = 9.01$

7)  $\frac{3x + Z}{Q} = 19.8y^3 G^5$

8) The sum of three consecutive integers is 186. Find these integers **using algebra**. **Show your work**.

Use a variable like  $x$ , and translate the problem into an equation, solve the equation, then state the solution to the question. Try letting  $x$  be the smallest of these three integers. If  $x$  is the smallest integer, then  $x+1$  is the next and so on.

9) \$100,000 is invested in stocks and bonds. Bonds earn 4%, and stock earns 7%. If the combination of investments (portfolio) earns 6.2%, how much was invested each in bonds and stock? **Use algebra**. **Show your work**.

Use one variable, say  $b$  for the amount in bonds. Then, the amount in stock must be  $100000 - b$ . Now, 4% of the amount in bonds + 7% of the amount in stock = 6.2% of the portfolio amount. Write this equation down using variables, also converting percents to decimals. (For example, 4% = .04) Solve this equation for  $b$ , then solve for the amount in stock. Answer the question above (underlined) with a sentence in English.

10) 40% alcohol brandy is mixed with 18% alcohol wine to create 1 liter of 25% alcohol punch. How much brandy and how much alcohol must be used? (This problem is essentially identical to the problem above.) **Use algebra!** **Show your work!**