

Directions:

- i. Show all relevant work. No work, no credit.
- ii. Distinguish your work from your answers.
- iii. Due on 09/17/14 at the beginning of class.

Set up an algebraic equation and solve each problem.

- 1) The radiator in a certain make of car needs to contain 40 liters of 40% antifreeze. The radiator now contains 40 liters of 20% antifreeze. How many liters of this solution must be drained and replaced with 100% antifreeze to get the desired strength?

Solve the problem.

- 2) A boat can go 63 mph in still water. It takes as long to go 320 miles upstream as it does to go downstream 400 miles. How fast is the current?

3) The manager of a coffee shop has one type of coffee that sells for \$6 per pound and another type that sells for \$12 per pound. The manager wishes to mix 100 pounds of the \$12 coffee to get a mixture that will sell for \$11 per pound. How many pounds of the \$6 coffee should be used?

4) A tree casts a shadow 17 m long. At the same time, the shadow cast by a 47-cm tall statue is 67 cm long. Find the height of the tree. Round results to the nearest unit.

5) A picture 11 inches by 21 inches is to be mounted on a piece of matboard so that there is an even amount of mat all around the picture. How wide will the border be if the area of the border is 228 square inches?