

MATH 286 PROBLEMS DUE FEBRUARY 7, 2001

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1. A home owner takes a 30 year fixed mortgage for \$120,000.— at the rate of 8%.

- (a) What is his/her monthly payment?
- (b) How much does he/she owe after 15 years?

2. If I want to finance a car over the period of 3 years at 12% simple interest rate, and the maximum payment I can afford is \$300.—, how much can I afford to borrow for the car?

3. Solve:

$$y' = -(x + y)^2.$$

4. Solve:

$$y' = \frac{y}{x} + \frac{y^2}{x^2}.$$

5. Find the solution of

$$y'' - 3y' + 2y = 0, \quad y(0) = 1, y'(0) = 1.$$