

HOMEWORK 7 - MATH 111

DUE DATE: Wednesday, October 30

INSTRUCTOR: George Voutsadakis

Read each problem very carefully before starting to solve it. Each question is worth 1 point. It is necessary to show your work. Correct answers without explanations are worth 0 points.

GOOD LUCK!!

1. Solve the equation $\log_{18} x + \log_{18} (x - 7) = 1$.
2. Solve the equation $\log (x^3) = (\log x)^2$.
3. The growth of an outpatient surgery as a percent of total surgeries at hospitals is approximated by $f(x) = -1317 + 304 \ln x$, where x represents the number of years since 1900.
 - (a) What does this function predict for the percent of outpatient surgeries in 1998?
 - (b) When did outpatient surgeries reach 50%?
4. Find the simple interest on a loan of \$40,000 at 6% made on September 1 and due on November 30.
5. A friend of yours decided to go back to college. She decides to buy a small car for \$6,000. She intends to borrow the money from a bank with 10% discount rate. If she plans to repay the loan in 2 years what will be the amount of her loan?
6. Find the amount of interest earned by a deposit of \$10,000 compounded semiannually at 5% for 3 years.
7. Find the present value of the future amount \$5,000 compounded semiannually at 3% for 2 years.
8. Find the sum of the first four terms of the geometric sequence with first term $a = 2$ and common ratio $r = 3$.