

Review Problems for Midterm I

review session: Tue., Feb 21, 5:20-7:20pm in Heavy Eng. 201

No books, papers, calculators. Cell phones and pagers must be turned off.

Answers need not be evaluated: for example, $\ln(19)$, $10e^{0.04}$ are acceptable answers.

1. Problem 14 page 12.
2. Problem 15 page 38.
3. Let $g(x)$ be the function whose graph is given in Figure 1.82 page 55.
 - (a) Find $g(1)$;
 - (b) Find the average rate of change of the function between 1 and 3;
 - (c) Find the x -intervals on which the function is increasing/decreasing;
 - (d) Find the x -intervals on which the function is concave up/down.
4. If you deposit \$100 in the bank at 4% interest rate compounded annually,
 - (a) How much will you have after six years?
 - (b) How many years will it take until you have \$200?
5. Solve for x :
 - (a) $100 = 25 * 2^x$
 - (b) $10 = 6e^{0.5x}$
 - (c) $5 * 2^x = 6 * 4^x$
6. If $f(x) = x^2$ and $g(x) = x + 2$ find and simplify:
 - (a) $f(g(1)) =$
 - (b) $f(g(x)) =$
 - (c) $g(f(x)) =$
 - (d) $g(g(0)) =$
7. The distance (in meters) of an object from a point is given by $s(t) = t^2 + 3t$, where time t is in seconds.
 - (a) What is the average velocity of the object between $t = 1$ and $t = 3$?
 - (b) By using a small interval, of 0.01 seconds, give an approximation of the instantaneous velocity at $t = 1$.

Other problems: page 13 pb 24, page 49 pb 14,16,34, page 55 pb 12.