

Math 1a. §2.1. Worksheet

Fall 2005

1. Let $f(x) = 1/x$.
 - (a) Is the slope of the tangent line to f at $P = (1/2, 2)$ positive or negative?
 - (b) Estimate the slope of the tangent line to f at P by computing the slope of a secant line through P and $Q = (0.49, f(0.49))$.
 - (c) Can you guess the exact slope of the tangent line at P ?
 - (d) What is the equation of the tangent line to f at P ?

2. The table below gives values of $c(t)$, the concentration ($\mu\text{g}/\text{cm}^3$) of a drug in the bloodstream at time t (min). Construct a table of values that estimates how $c(t)$ changes with respect to time.

t (min)	0	0.1	0.2	0.3	0.4	0.5
$c(t)$ ($\mu\text{g}/\text{cm}^3$)	0.84	0.89	0.94	0.98	1.00	1.00
t (min)	0.6	0.7	0.8	0.9	1.0	
$c(t)$ ($\mu\text{g}/\text{cm}^3$)	0.97	0.90	0.79	0.63	0.41	

Be prepared to discuss and defend your results.