Math 455AB	H#			Name:							
Palekar	FTC More Practice			Date:							_
1) Let $F(x) = \int_{0}^{x} f(t)$	dt, where f is the function whose g	graph is sh	iown.								
a) Evaluate			y,	۸.							
F(0) =										\neg	
F(1) =					+	+				_	
F(2) =					/	+	-				
F(3) =			L 1				f				
F(6) =			1								
b) On what interva	l is F increasing?		0		1			5			ť
c) Where does F	have a maximum value?							\searrow		/	
d) Sketch a rough g	eraph of F .										

2) Evaluate the definite integral.



3) Suppose the C(t) represents the daily cost of heating your house, measured in dollars per day, where t is time measured in days and t = 0 corresponds to January 1, 2010.

Interpret
$$\int_{0}^{90} C(t) dt$$
 and $\frac{1}{90-0} \int_{0}^{90} C(t) dt$.

4) Use the Fundamental Theorem of Calculus to find F'(x).



6) Concert tickets went on sale at noon (t = 0) and were sold out within 9 hours. The number of people waiting in line to purchase tickets at time t is modeled by a twice-differentiable strictly monotonic function C for 0 ≤ t ≤ 9. Values of C(t) are various times t are shown in the table below.

t (hours)	0	1	3	4	7	8	9
C(t) (people)	190	180	140	120	100	80	0

a) Using correct units, explain the meaning of $\frac{1}{8}\int_{1}^{9}C(t)dt$ in the context of this problem.

b) Use a *left Riemann sum* with *five* subintervals to estimate $\frac{1}{8}\int_{1}^{9} C(t)dt$. Does this approximation overestimate or underestimate the actual value of $\frac{1}{8}\int_{1}^{9} C(t)dt$. Give a reason for your answer.