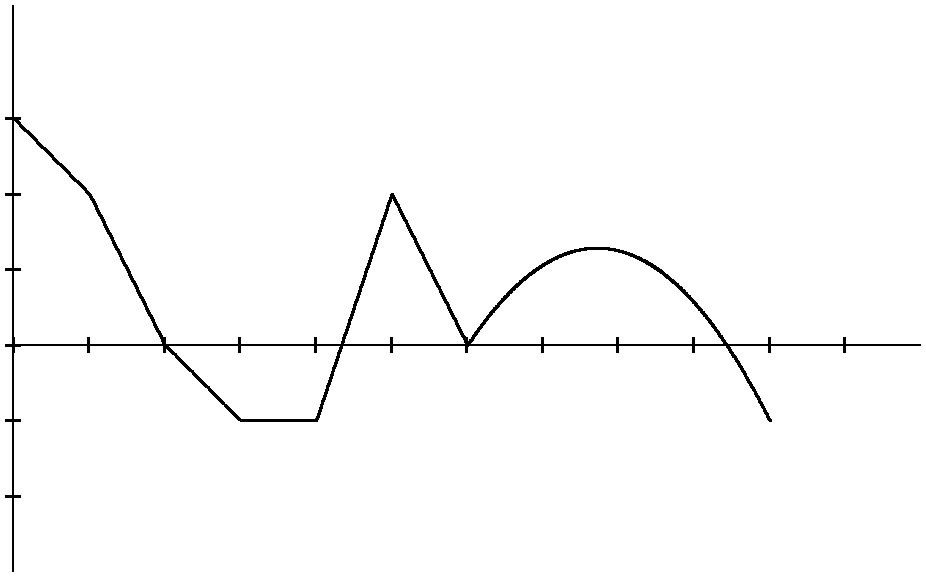
Summer Term I | MA124 Calculus II
Kostadinov | Boston University

Quiz No.2

student:

Let $g(x) = \int_0^x f(t)dt$, where f is the function whose graph is shown.



Problem 1: Evaluate the function values

$$g(0) = \qquad g(1) = \qquad g(3) =$$

Problem 2: Evaluate the function values

$$f(0) = \qquad g'(1) = \qquad g'(2) =$$

Problem 3: Where $g(x)$ has a maximal value in the interval [0,9]?
(Circle the right answer)
$x = 0 \quad x = 2 \quad x = 3 \quad x = 4 \quad x = 5 \quad x = 6 \quad x = 8 \quad x = 9$

Problem 4: On what interval g decreases?

Problem 5: Use Fundamental theorem of Calculus to find the derivative of the function:
a) $F(x) = \int_0^x \ln(t)dt$
b) $F(x) = \int_x^2 t^2 dt$
c) $F(y) = \int_e^y x^2 \sin(x)dx$

Problem 6: Evaluate the integral $\int_1^2 x^{-2}dx$

Problem 7: Evaluate the integral $\int_0^1 x^{3/7}dx$

Problem 8: State the Fundamental Theorem of Calculus:

Problem 9: Compute y' if $y = (x^2 + e^x)\ln x$.

Problem 10: Write a particular antiderivative for each of the following functions

a) $y = e^x$ c) $y = x^5$

b) $y = x^{-1}$ d) $y = \sin(x)$