

25 points	25 points	25 points	25 points	100 points
1	2	3	4	Total

MATH 102 CALCULUS II

10.04.2011

İzmir University of Economics Faculty of Arts and Sciences, Department of Mathematics

FIRST MIDTERM EXAM

Student Name and Department:.....

Section: Check for your instructor and course program below:

Halil ORUÇ, Friday 08:30 – 11:20

Halil ORUÇ, Friday 12:30-15:20

Gökhan BİLHAN, Wednesday, 8:30-11:20

Gökhan BİLHAN, Wednesday, 12:30-15:20

İbrahim Çanak, Thursday 8:30-11:20, Tues. 12:30-15:20

İlgin SAĞER, Monday, 08:30–11:20, 12:30–15:20

İlgin SAĞER, Tuesday, 15:30–18:20

İlgin SAĞER, Wednesday, 12:30–15:20

Good Luck...

1. (25pts) Public awareness of a congressional candidate before and after a successful campaign was approximated by $P(t) = \frac{8.4t}{t^2+49} + 0.1$ for $0 \leq t \leq 24$ where t is time in months after the campaign started and $P(t)$ is the fraction of the number of people in the congressional district who could recall the candidate's name. What is the average fraction of the number of people who could recall the candidate's name during the first 7 months of the campaign? During the first 2 year of the campaign?
Solution:

2. (8+9+8 pt) Evaluate the following integrals

(a) $\int \frac{3}{x^3 - 2x^2 - 3x} dx = ?$

(b) $\int_1^2 \frac{x+1}{2x^2 + 4x + 4} dx = ?$

(c) $\int \frac{x}{\sqrt{6-x}} dx = ?$

Solution:

3. (6+19 pt)

- (a) Sketch the graph $y = 5 - x^2$ and $y = 2 - 2x$ on the same coordinate system
- (b) Evaluate the area bounded by these two curves

Solution:

4. (25 pt) Find a function $y = f(x)$ that satisfies both conditions

$$\frac{dy}{dx} = 3x^2 - 2, f(0) = 4.$$