

MA-163 (W,07)
Test 1 Instructions

Do your work and give your answers on the paper I've provided. Your work is part of your answer and itself will be graded. Do not try to get everything on just a few sheets of paper. One problem per page would be okay with me. Be sure to number the problems clearly. When you turn in your papers, have them in order with the test paper on the top.

The test is to be done in pencil.

A calculator can be used on this test only to (1) do arithmetic, (2) to draw graphs and find intersection points, etc., and (3) to use the NUMINT program. You may not use the built-in CAS functions on your calculator to do symbolic algebra, to find derivatives and/or integrals, nor to find values of definite integrals.

If you use NUMINT, tell which of the numerical approximations you're giving (Left endpoints, Right Endpoints or Trapezoids) and tell the number of subintervals you're using.

Answers are given in sentences, including units of measurement when appropriate. Here are examples of sentences:

The area is 22 square units.

$$\int_0^1 2x \, dx = 1$$

Volume of the solid = $\int_0^1 2x \, dx = 1$ cubic units.

When you are asked to give an exact answer, the result usually involves π or e or a fraction reduced to lowest terms. It is not a decimal approximation given by your calculator. (However, in applied problems, like those asking for areas or volumes or average speeds, etc., you may want to give both the exact value and the decimal approximation.)

For the area and volume problems, partial credit will be given only if your exposition is accompanied by a picture of the sort that I've demonstrated in class.

The arc length formula is $\int_a^b \sqrt{1 + (f'(x))^2} \, dx$. If you think you need another formula, ask me and I may give it to you if it's not too basic or it's not something I think it's reasonable for you not to know.

The EXTRA CREDIT points help your score only a little when compared to the required problems on the test. Therefore you should carefully check over your work and your answers on Problems 1 - 9 before you try the EC problems.