

Problems for the practice quiz (**which is graded but does not count**):

1. Consider the implicit function  $\sin(y) + \cos(x) = 0$ . Compute  $dy/dx$ .  
Assuming  $\cos(y)$ , and  $\sin(x)$  are positive and using  $\cos(y) = \sqrt{1 - \sin(y)^2}$ , simplify your answer as much as possible. Explain in words what your answer means.
2. Perform the integral:  $\int x \ln(x^2) dx$  in the following two ways:
  - Substitute  $u = x^2$  and perform the resulting integral using a table or using integration by parts.
  - Simplify the expression using the properties of logarithms and do integration by parts using  $u = \ln x$  and  $dv$  equals the rest.

Do you get the same result? Should you?

3. Find and classify the inflection and critical points of  $f(x) = (x^3/3) + 3x^2 + 5x + 7$ . Sketch the graph of the function.

ALSO

Bring three (3) *blank* green/blue books to your TA.