

NAME: \_\_\_\_\_

Math 200 Calculus I (Bueler)

23 April 2008

## Quiz #9

*20 points total. You have 20 minutes.*

1. (a) (5 pts) A piece of wire 9 m long is cut into two pieces, as shown:

The piece of length  $x$  is bent into a square and the other piece is bent into a circle. Give an expression  $A = A(x)$  for the total area enclosed in the square and the circle together.

- (b) (5 pts) Find the length  $x$  so that the total area is as small as possible.

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2. (5 pts) Find the most general antiderivative of the given function:

$$f(x) = 4e^x + 7\sec^2 x$$

3. (5 pts) Find  $f$  if  $f'(x) = 9\sqrt{x} + 4x^2$  and  $f(1) = 0$ .