

Math 133

Quiz 6 Sample
October 28, 2008

You may use your calculator and a (half-page) formula sheet as specified in class. Indicate any calculations you do with the calculator and show your algebra whenever calculations are done by hand.

1. Use derivative rules (not the definition of the derivative) to find the following derivatives:

(a) $q'(x)$ for $q(x) = 7x^5 + 75 + \frac{7}{x^5}$

(b) $k'(z)$ for $k(z) = \frac{e^z}{1+2e^z}$.

(c) $r''(t)$ for $r(t) = t^2e^t$.

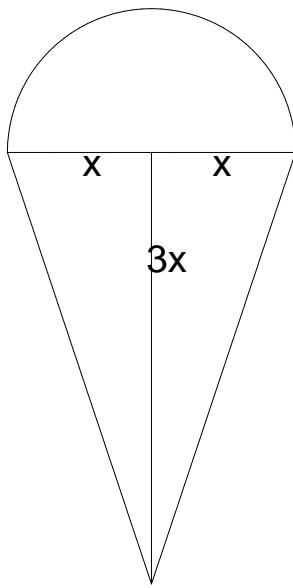


Figure 1:

2. The above figure consists of a half disk resting on top of an isosceles triangle.
 - (a) Find a formula for the area $A(x)$ of the above figure in terms of x .
 - (b) What is the instantaneous rate of change of the area of the figure when $x = 5$.