

MTH 124.019 Quiz 10 (Take-Home)
due Wednesday 21 April 2010

Name:

Show *all* your work. Points will be deducted for incomplete work.

1. Let $f(s) = \int_3^s \sin(t^2 + 1)dt$.

(a) What is the exact value of $f(3)$?

(b) Use a calculator to compute the following values of f to 2 decimal places:

s	3.001	3.01	3.1	4
$f(s)$				

(c) Use the table above to estimate $f'(3)$. Show your computations.

(d) What is the exact value of $f'(3)$?

(e) Use a calculator to get an approximation for your answer in part (d). Compare this to your answer in part (c).

2. How are the marginal cost function $C'(q)$ and the cost function $C(q)$ related mathematically? If you knew $C(q)$, could you find $C'(q)$? If you knew $C'(q)$, could you find $C(q)$? If your answer to either of these questions is “no”, what additional information would you need? **Please answer in complete sentences. (Yes, really.)**