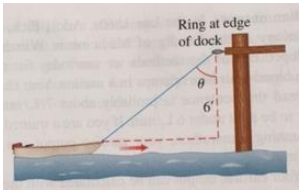
Quiz #4 Name: Due May 25th @ 10:15 a.m.

You may only use your textbook, your notes, and your calculator on these problems. You may not use any outside resources, including tutors or solution manuals. Remember that the purpose of these quizzes is to see if you understand what you have learned on your homework, and also to tell you what you still need to study for the upcoming exam.

1. (4 points) A dinghy is pulled toward a dock by a rope from the bow through a ring on the dock 6 ft above the bow. The rope is hauled in at the rate of 2 ft./sec.
   a) How fast is the boat approaching the dock when 10 ft of rope are out?
   b) At what rate is the angle θ changing at this instant?



Find the derivative- you do not need to use the definition of a derivative but make sure you show all your work.

2. (2 points) $y = 5^{\cos(x)} + \ln(x^2 + 1)$

3. (2 points) $y = \frac{x^2 e^x}{2\sqrt{x+1}}$

4. (2 points) $y = \ln(x^2 + 4) - x\tan^{-1}(\frac{x}{2})$