

Selected Answers and Hints to Math 180 Final Exam Practice Problems

These selected answers and hints are to help you check your work. These are NOT complete solutions. You would not get credit on an exam without showing your work and your logical arguments (especially in the problems that ask you to prove something).

1. The optimal choice is $\delta = \epsilon/3$.
2. (a) IVT: $f(0) = 2, f(-1) = -2$.
(b) If there were a second root, there would have to be a maximum or minimum somewhere. Use the first derivative test to show this function has no maximums or minimums.
3. (a) $x=0$
(b) max at $x=1$
(c) flex at $x=2$
(d) no vertical asymptotes
(e) horizontal asymptote $y=0$ to the right
4. Compute the following limits.
 - (a) 1
 - (b) $2/3$
 - (c) $2/3$
 - (d) $\frac{-2}{\pi}$
 - (e) 1
5. Evaluate the following:
 - (a) $-\cos(\ln(x)) + C$
 - (b) 0 (odd function)
 - (c) $\frac{33\sqrt{33}-1}{9}$
6. Ans: b.
7. $\frac{1}{80\pi}$ cm/min
8. $1/5$
9. Base side 4 ft, height 2 ft.
10. $L(x) = \frac{1}{28}(x - 3)$.
11. $84/4$