

MAT 21A, Spring 2017

Homework Assignment 3

Due before the start of the class on Monday, April 24

Please read Sections 2.5 and 2.6 of the textbook before starting on the problem set.

Written Assignment:

Section 2.5: 38. Compute the limit $\lim_{x \rightarrow 1} \cos^{-1}(\ln \sqrt{x})$.

56. Show that the function $F(x) = (x - a)^2 \cdot (x - b)^2 + x$ takes on the value $(a + b)/2$ for some value of x .

Section 2.6: 31. Compute the limit:

$$\lim_{x \rightarrow \infty} \frac{2x^{5/3} - x^{1/3} + 7}{x^{8/5} + 3x + \sqrt{x}}.$$

110. Graph the function

$$y = \frac{3}{2} \left(\frac{x}{x-1} \right)^{2/3}$$

and answer the following questions:

- How does the graph behave as $x \rightarrow 0^+$
- How does the graph behave as $x \rightarrow \pm\infty$?
- How does the graph behave near $x = 1$ and $x = -1$?

The homework must be legible, and written in connected sentences that explains what you are doing. Just the answer (whether correct or not) is not enough. Please put your name and section number on every page and staple the pages together. Homework should be handed in on time, late homework will not be graded.