

Math 241: HW 5

Due on Friday, June 14

Summer '13

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Problem 1

Let

$$f(x) = \frac{\sqrt{\pi x^2 + 10x} - \sqrt{3x^2 + 1}}{x + 2}$$

Compute

$$\lim_{x \rightarrow \infty} f(x) \quad \text{and} \quad \lim_{x \rightarrow -\infty} f(x)$$

Problem 2

A fiber board shipping crate with a square base and top is constructed with double thickness on the bottom for strength. If the volume of the crate is $96ft^3$, find the dimensions that maximize the needed material.