

Homework 09

1. Section 4.4: problems 77, 85, 105, 111.

Remark:

The line $y = b$ is a horizontal asymptote of the graph of $y = f(x)$ if $\lim_{x \rightarrow \infty} f(x) = b$ or $\lim_{x \rightarrow -\infty} f(x) = b$. See also page 120 of the textbook.

The line $y = mx + b$ is a horizontal asymptote of the graph of $y = f(x)$ if $\lim_{x \rightarrow \infty} f(x) - (mx + b) = 0$ or $\lim_{x \rightarrow -\infty} f(x) - (mx + b) = 0$. See also page 123 of the textbook.

The line $x = a$ is a vertical asymptote of the graph of $y = f(x)$ if $\lim_{x \rightarrow a^+} f(x) = \pm\infty$ or $\lim_{x \rightarrow a^-} f(x) = \pm\infty$. See also page 126 of the textbook.

2. Section 4.5: problems 21, 39, 41, 51, 57, 61, 63, 65, 69, 71, 73, 80, 81(b), 84(c), 86(c,d), 88.

Remark: In problems 69, 71, 73, just find the correct limit using any method you like.