

## Homework 07

1. Section 4.2: problems 18, 19, 21, 39, 61, 65.
2. Section 4.3: problems 7, 11, 27, 33, 43, 51, 74, 77.
3. 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 an oblique 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.

4. Section 4.5, part 1: problems 21, 27, 39, 41.

5. Section 4.5: Evaluate  $\lim_{x \rightarrow 0^+} \frac{e^{-\frac{1}{x}}}{x^\pi}$ .

6. Section 4.5, part 2 (for homework 08): problems 51, 57, 61, 63, 65, 69, 71, 73, 80, 81(b), 84(c), 86(c,d), 88. problems 21, 39, 41, 51, 57, 61, 63, 65, 69, 71, 73, 80, 84(c), 86(c,d), 88.

Remark: In problems 69, 71, 73, find the correct limit using any method of your choice.