

# Homework 13

Name:

Date: June 18, 2013

**P 1.** Find the domain of

$$f(x) = \frac{\log_2(3x + 1)}{e^{2x} - 5e^x + 4} - \frac{\sin(2x + 1)}{x^2 + 16} 10^x - \frac{\sqrt{10 - x}}{\sqrt{x - 9}}$$

Express your answer in interval notation.

**P 2.** Graph

$$f(x) = \begin{cases} x + 9, & x < 2 \\ (x - 2)^2 - 3, & 2 \leq x < 4 \\ \log_2(x - 4), & 4 < x < 8 \\ 2 \cos(\pi x + \pi/4) - 1, & 8 \leq x \leq 10 \\ \frac{2}{12-x}, & 10 < x \end{cases}$$