

Drill Handout      Section 4.1      October 29, 2019      Name: \_\_\_\_\_

- (1) Find the critical points of the following functions.

(a)

$$f(x) = x \ln x$$

(b)

$$f(x) = \frac{x-1}{x^2-5x}$$

(c)

$$f(x) = 6e^x - 3e^{2x}$$

- (2) Determine the location and value of the absolute extreme values of  $f$  on the given interval, if they exist:

(a)

$$f(x) = \frac{x}{\sqrt{x-4}} \text{ on } [5, 13]$$

(b)

$$f(x) = (x-2)e^x \text{ on } [0, 2]$$

(c)

$$f(x) = (x-2)^{2/3} \text{ on } [-6, 3]$$

(d)

$$f(x) = \sin x \cos x \text{ on } [0, \frac{\pi}{2}]$$