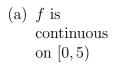
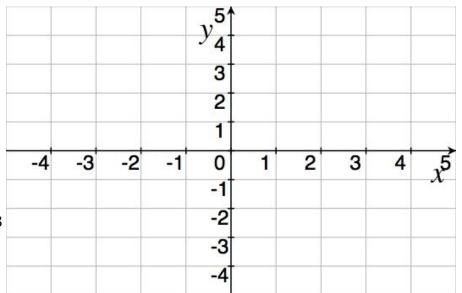
Extrema §4.1

1. Draw graphs of two functions f and g so that:



- (b) f has a local max when x = 3
- (c) f'(3) = 0
- (d) g is continuous on (-5,0]
- (e) g has a local max when x = -3
- (f) g'(-3) is not defined.



- 2. Consider $m(x) = x^3 9x^2 48x 5$.
 - (a) Find the critical points of m.

(b) Find all local extrema and their values.

Mean Value Theorem §4.2

- 1. Consider the function $f(x) = \cos 2x$ with a domain of $[\pi/8, 15\pi/8]$.
 - (a) Verify the three hypotheses of Rolle's Theorem.
 - (b) Find all numbers c that satisfy the conclusion of Rolle's Theorem.

2. Exhibit the Mean Value Theorem for $y = x^3 + x - 1$ on the interval [1, 2].