Calculus I **Analyzing Functions** Name:

1. Answer the following for the function $f(x) = \dfrac{1}{x^2}$.

   (a) Find any verical or horizonal asymptotes.

   (b) Where is f increasing/decreasing?

   (c) Find all local max/min.

   (d) Where is f concave up/down?

   (e) Find all inflection points.

   (f) Graph $f(x)$.

2. Answer the following for the function $f(x) = \dfrac{x^2 - x - 2}{x - 3}$.

(a) Find any verical or horizonal asymptotes.

(b) Where is f increasing/decreasing?

(c) Find all local max/min.

(d) Where is f concave up/down?

(e) Find all inflection points.

(f) Graph $f(x)$.

3. Answer the following for the function $f(x) = \dfrac{x^2 - x - 2}{x - 3}$.

(a) Find any verical or horizonal asymptotes.

(b) Where is f increasing/decreasing?

(c) Find all local max/min.

(d) Where is f concave up/down?

(e) Find all inflection points.

(f) Graph $f(x)$.