

- Routine problems:

§4.2. # 6, 16, 21, 43, 44.

§4.3. # 32, 40.

§4.4. # 7, 9, 38.

§4.5. # 20, 25, 29, 31, 33, 38, 62.

§4.6. # 35, 36.

§4.7. # 37, 52.

§4.8. # 3, 6, 20, 23, 25, 33, 41, 55.

§4.9. # 39, 43, 59.

- To hand in:

(1) Let $f(x) = \frac{x^3 - 3x^2}{x + 1}$.

- Find the domain of f .
- Find the critical points and intervals on which f is increasing and those on which f is decreasing.
- Find the inflection points and intervals on which f is concave up and concave down.

Hint: You can solve the equation $f''(x) = 0$ by “completing the cube.”

- Compile all the information gathered above in a table.
- Sketch the graph of f , incorporating the information above.