1. Consider the following function.

\[ f(x) = \frac{x^2 + 3x}{x - 1} \]

(a) For what values of \( x \) is \( f(x) \) positive? When it \( f(x) \) negative?

(b) Find all critical points of \( f(x) \).

(c) For what values of \( x \) is \( f(x) \) increasing? When is \( f(x) \) decreasing?

(d) Which critical points are local maxima? Which are local minima?

(e) For what values of \( x \) is \( f(x) \) concave up? When is \( f(x) \) concave down?