End Behavior of Polynomials

Describe the end behavior for the following functions:

\[ f(x) = -3x^3 + 2x^2 - 4 \]

\[ x \to -\infty \quad y \to -\infty \]

\[ f(x) = 8x^2 - 2x + 3 \]

\[ x \to -\infty \quad y \to \infty \]

\[ f(x) = 7x^3 + 5x^2 + 1 \]

\[ x \to -\infty \quad y \to -\infty \]

\[ f(x) = -5x^4 + 2x^2 - 4x \]

\[ x \to \infty \quad y \to -\infty \]

For each graph,

a. describe the end behavior,

b. determine whether it represents an odd-degree or an even-degree function, and

c. state the number of real zeroes.

Describe any critical points (max, min, pts of inflection)

\[ f(x) = 2x^3 + 4x^2 - 5x + 1 \]

\[ \text{Rel Max: } (-1.79, 11.39) \]

\[ \text{Rel Min: } (0.46, -1.259) \]

\[ \text{pt of inflection } x \approx -1 \]