7. (12 pts.) Graph the function

\[ f(x) = \frac{4x^3 - 12x^2}{(x + 2)^3} \]

Your graph must include exact roots, exact asymptotes, and correct behavior near roots and asymptotes. You must show all work that leads to these conclusions.

**Roots:** \( 4x^2 (x - 3) \) \( \Rightarrow x = 0, 3 \)

**Asymptotes:** \( x = -2 \) and \( y = 4 \)