

Quiz 6 — 18 February 2020

Answer the questions in the spaces provided. **Show all of your work and circle the answer you would like to have graded for each question.**

Name and section: _____

1. Given $f(x) = x^5 - 3x^4 + 5x^3 - 11x^2 + 4x + 4$ has a root at $x = 2i$ and $x = 1$, write f as a product of linear factors.

2. Let $f(x) = (x + 1)^3(x - 2)^2$ and $g(x) = x^2 - 2x - 3$.

(i) Determine the vertical asymptote(s) and hole(s) of the rational function $(f/g)(x)$.

- (ii) Use the axes below to sketch the graph of f . Clearly indicate at least **three** points that lie on the graph of f .

