

Pre-Cal CW 2.4-2.7 Complex Numbers and Rational Functions

Simplify each:

1. i^{253}

2. $\sqrt{-8} - i\sqrt{18}$

3. $\sqrt{-12}\sqrt{-6}$

4. $(7-2i) - 3(1+i)$

5. $(3+i)^2 + (5-4i)$

6. $\frac{5-2i}{3+4i}$

7. Given that $x = -1$ is a zero of $f(x) = x^3 - x^2 + x + 3$, find the remaining zeros.

Given: $f(x) = \frac{x^2 + 5x - 6}{x^2 - 1}$. Find the following features of the rational function:

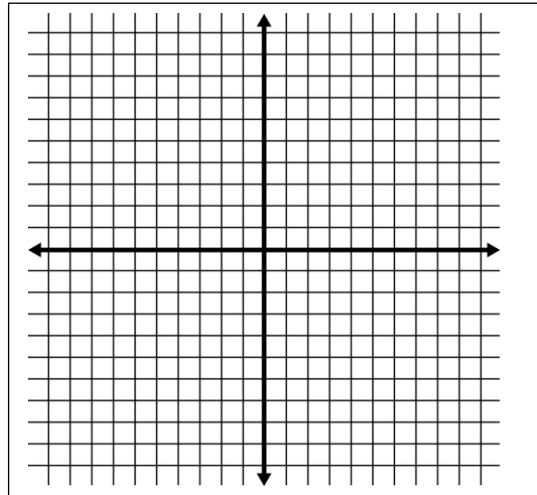
8. Vertical Asymptotes (if any)

9. Horizontal Asymptotes (if any)

10. Points of Removable Discontinuity (if any)

11. x-intercepts (if any)

12. Graph the above rational function.



13. What is the slant asymptote of $f(x) = \frac{2x^3 - x^2 + 5x - 7}{x^2 - 3x + 1}$?