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- 1) Use the given zero to find the remaining zeros of $f(x) = x^4 + 3x^3 - 5x^2 - 21x + 22$, $-3 + \sqrt{2}i$
- 2) Find a polynomial with real coefficients with zeros $3, 1$ & $-1 - 3i$ & $f(2) = -36$
- 3) Sketch the graph of the following functions, show appropriate asymptotes, x- & y-intercepts & some points:
- a) $f(x) = \frac{1-3x}{1-x}$

$$\text{b) } f(x) = -\frac{x}{x^2 - 9}$$

$$\text{c) } f(x) = \frac{x^2 - x - 2}{x - 1}$$

$$\text{d) } f(x) = \frac{x^2}{x^2 + 1}$$