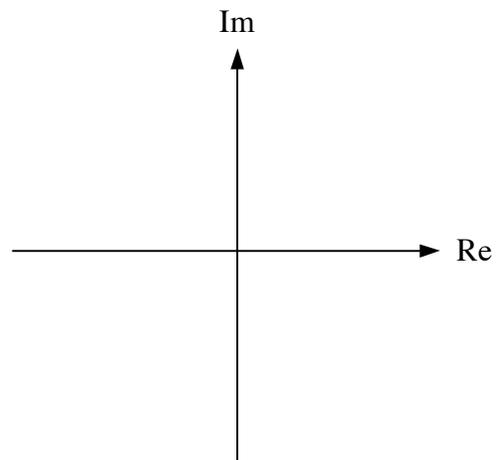**Ex:**   Plot the poles and zeros of $V(s)$ in the s plane.

$$V(s) = \frac{s^2 + 5s + 6}{(s+1)\left[(s+4)^2 + 5^2\right]}$$

Im

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Sol'n: The zeros are the roots of the numerator. The poles are the roots of the denominator.

$$V(s) = \frac{s^2 + 5s + 6}{(s+1)\left[(s+4)^2 + 5^2\right]} = \frac{(s+2)(s+3)}{(s+1)(s+4+j5)(s+4-j5)}$$

Zeros are plotted as o's at $s = -2$ and at $s = -3$.

Poles are plotted as x's at $s = -1$, $s = -4 -j5$, and at $s = -4 + j5$.