

**EX:** Plot the poles and zeros of  $F(s)$  in the  $s$  plane:

$$F(s) = \frac{s^2 + 8s + 16}{(s + 8)(s^2 + 6s + 34)}$$

**SOL'N:** We factor the numerator and denominator:

$$F(s) = \frac{(s + 4)^2}{(s + 8)(s + 3 + j5)(s + 3 - j5)}$$

We plot the roots of the numerator, (i.e., the zeros), as **o**'s and the roots of the denominator, (i.e., the poles), as **x**'s.

Note that we use a small "2" to indicate the multiple zeros at  $s = -4$ .

