Pset #9

ISIM

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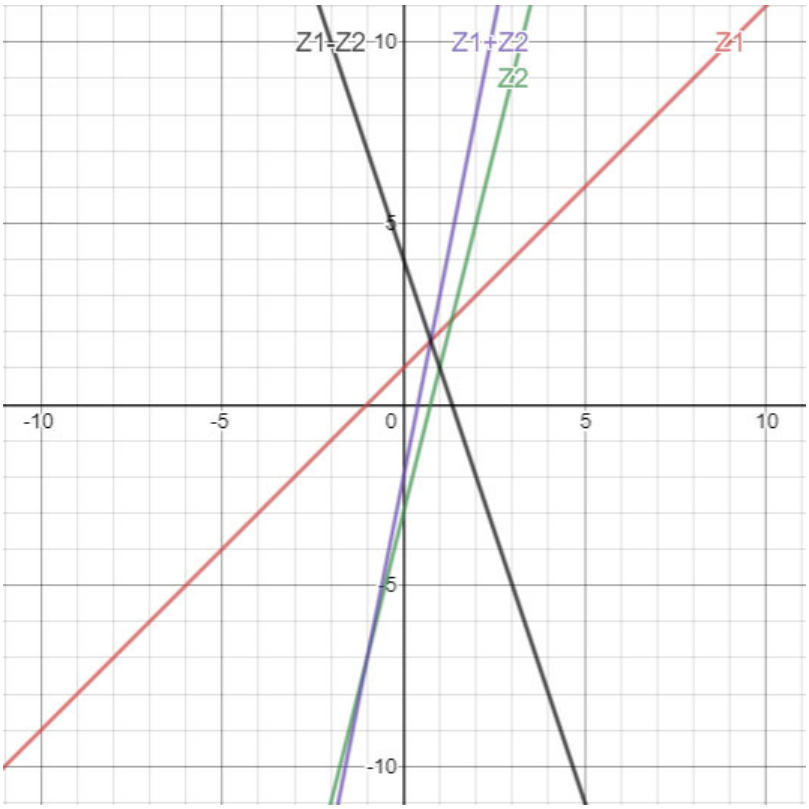
Part 1

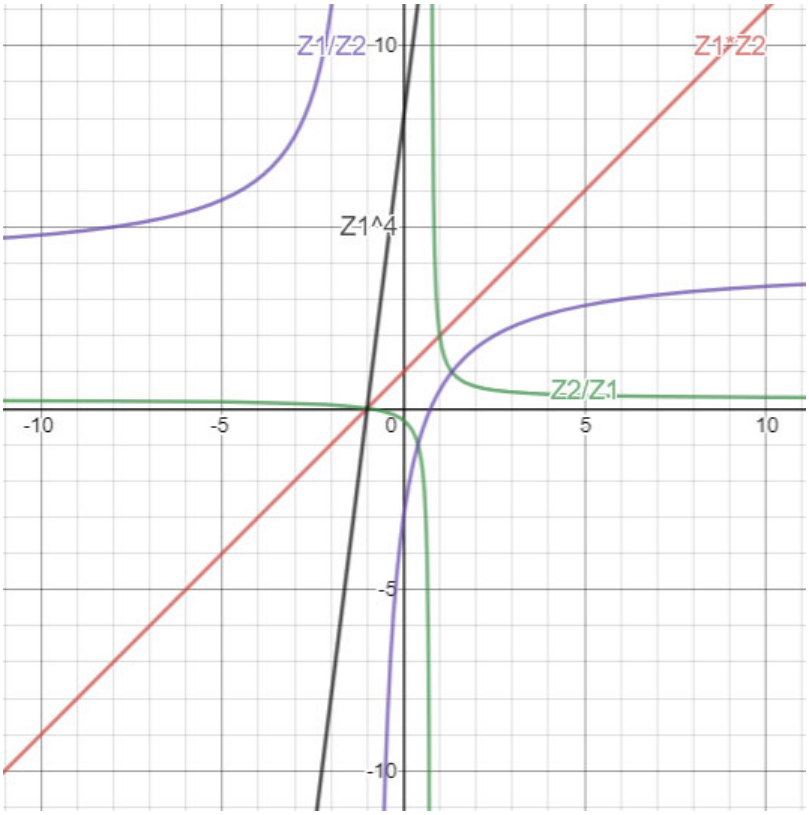
Z1: r = sqrt(2), theta = 0.79 radians

Z2: r = 5, theta = -0.93 radians

Part 2, 3, 4



Part 5,6,7



Part 8

Z3 = 1/(1/jw)

Z4 = jw/(1+jw)

I tried to use the following formula from the isim textbook to convert from this complex number into polar notation, unsuccessfully.

Z = x + j*y = r * (cos(theta) + j*sin(theta)), where wt = theta and r = sqrt(x^2 + y^2)

I could not figure out how to rearrange Z3 and Z4 to move the j out of the denominator, causing me to be unable to apply Z = x + j*y to solve for x and y and consequently r.

Part 9

Blue is z3 because as omega increases, z3 decreases. And vice versa, red must therefore be z4.