

PROBLEM:

Evaluate the following and give the answer in both rectangular and polar form. In all cases, assume that the complex numbers are $z_1 = -2 - j2$ and $z_2 = 3e^{-j3\pi/4}$.

(a) Conjugate: z_1^*

(b) jz_2

(c) z_2/z_1

(d) z_2^2

(e) $z_1^{-1} = 1/z_1$

(f) z_1z_2

(g) $z_1 + z_2^*$

(h) $|z_2|^2 = z_2z_2^*$

(i) $z_2 + z_2^*$

Note: z^* means the “conjugate” of z . Part (h) is the *magnitude-squared*.