

Solve the following problems involving complex numbers. Note, the solutions have been given for the first two to allow you to check your solution method. State which tool(s) you chose to use to obtain your solutions (e.g., what calculator you used).

a)  $(3+j7) * (-4-j2) = 2-j34$

b)  $(33\angle 45^\circ)/(3\angle -60^\circ) = (11\angle 105^\circ)$

*used TI-68  
for all calculations*

c)  $(5-j9) + (-8+j3)$  (express answer in rectangular format)

$$(5-j9) + (-8+j3) = \underline{\underline{-3-j6}}$$

d)  $(6\angle 55^\circ) + (4\angle -135^\circ)$  (express answer in polar/phasor format with angle in degrees)

$$(6\angle 55^\circ) + (4\angle -135^\circ) = \underline{\underline{2.175\angle 73.63^\circ}}$$

e)  $(7-j4) * (4\angle -55^\circ)$  (express answer in both formats)

$$(7-j4)(4\angle -55^\circ) = \underline{\underline{32.249\angle -84.745^\circ = 2.954-j32.113}}$$

f)  $(6.4\angle 75^\circ)/(-2+j3)$  (express answer in both formats)

$$\frac{6.4\angle 75^\circ}{-2+j3} = \underline{\underline{1.775\angle -48.69^\circ = 1.172-j1.333}}$$

g)  $e^{(-0.3 + j2\pi/3)}$  (express answer in both formats)

$$e^{(-0.3 + j2\pi/3)} = \underline{\underline{0.7408\angle 120^\circ = -0.3704 + j0.6416}}$$

$\uparrow$                        $\uparrow$   
 $e^{-0.3}$                $e^{j2\pi/3}$