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1.
    - a)  $3 - j2$
    - b) 13
    - c)  $-2 - j2$
    - d) 0
    - e)  $-3 + j33$
  2. All answers =  $j$  and are vectors pointing straight up and having unit length
  3.
    - a)  $-117 + j44$
    - b)  $e^{j60^\circ}$
    - c)  $20 + j20\sqrt{3}$
    - d) 3
    - e)  $-1$
  4.
    - a)  $4e^{j30^\circ}$  V or  $4\angle 30^\circ$  V
    - b)  $7e^{-j135^\circ}$  mA or  $7\angle -135^\circ$  mA
    - c)  $20e^{j120^\circ}$   $\mu$ V or  $20\angle 120^\circ$   $\mu$ V
    - d)  $7.14e^{-j45^\circ}$   $\mu$ V or  $7.14\angle -45^\circ$   $\mu$ V
    - e)  $5e^{j66.9^\circ}$  V or  $5\angle 66.9^\circ$  V
  5.
    - a)  $i(t) = 6\cos(200t + 45^\circ)$  A
    - b)  $v(t) = 9\cos(200t + 90^\circ)$  V
    - c)  $i(t) = 2\cos(200t + 180^\circ)$  A
    - d)  $v(t) = 6\sqrt{2} \cos(200t + 90^\circ)$  V
    - e)  $i(t) = 20.1 \cos(200t + 45^\circ)$  A