2.5.)

$z^5 = 3 - 4i$

$z = \sqrt[5]{3-4i}$ $\qquad |z| = \sqrt{9+16} = \sqrt{25} = 5.$

$k = 0, 1, 2, 3, 4.$

$\sqrt[5]{z} = \sqrt[5]{|z|} \cdot \left(\cos\left(\frac{\varphi + 2k\pi}{5} \right) + i \sin\left(\frac{\varphi + 2k\pi}{5} \right) \right)$ $\qquad \varphi = \arctan\left(\frac{-4}{3}\right) = \underline{306{,}87°}$

k=0: $z_1 = 1{,}38 \cdot \left(\cos\left(\frac{306{,}87}{5} \right) + i \sin\left(\frac{306{,}87}{5} \right) \right) = 1{,}38 \cdot (\cos(61{,}37) + i \sin(61{,}37)) = \underline{0{,}661 + i\,1{,}21}$

k=1: $z_2 = 1{,}38 \cdot \left(\cos\left(\frac{306{,}87 + 360}{5} \right) + i \sin\left(\frac{306{,}87 + 360}{5} \right) \right) = 1{,}38 \cdot (\cos(133{,}37) + i \sin(133{,}37)) = \underline{-0{,}95 + i\,0{,}73}$ ~~$i\,0{,}73$~~ $i\,1.003$

k=2: $z_3 = 1{,}38 \cdot \left(\cos\left(\frac{306{,}87 + 720}{5} \right) + i \sin\left(\frac{306{,}87 + 720}{5} \right) \right) = 1{,}38 \cdot (\cos(205{,}37) + i \sin(205{,}37)) = \underline{-1{,}25 - i\,0{,}43}$ ~~$-i\,0{,}43$~~ $-i\,0{,}591$

k=3: $z_4 = 1{,}38 \cdot \left(\cos\left(\frac{306{,}87 + 1080}{5} \right) + i \sin\left(\frac{306{,}87 + 1080}{5} \right) \right) = 1{,}38 \cdot (\cos(277{,}37) + i \sin(277{,}37)) = \underline{0{,}18 - i\,0{,}95}$ ~~$-i\,0{,}95$~~ $-i\,1{,}368$

k=4: $z_5 = 1{,}38 \cdot \left(\cos\left(\frac{306{,}87 + 1440}{5} \right) + i \sin\left(\frac{306{,}87 + 1440}{5} \right) \right) = 1{,}38 \cdot (\cos(349{,}37) + i \sin(349{,}37)) = \underline{1{,}36 - i\,0{,}25}$