$x^4 = -1$

$x^4 = \rho^4 (\cos 4\alpha + i \sin 4\alpha)$

$-1 = 1(-1 + 0i) = 1(\cos \pi + \sin \pi)$

$x = \sqrt[4]{1} \left(\cos \frac{\pi + 2k\pi}{4} + i \sin \frac{\pi + 2k\pi}{4}\right)$ $\boxed{0 \leq k \leq 3}$

$\boxed{k=0}$ $x = \left(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4}\right) = \frac{\sqrt{2}}{2} + i \frac{\sqrt{2}}{2} = \boxed{\frac{\sqrt{2}}{2}(1+i)}$

$\boxed{k=1}$ $x = \left(\cos \frac{3}{4}\pi + i \sin \frac{3}{4}\pi\right) = -\frac{\sqrt{2}}{2} + i \frac{\sqrt{2}}{2} = \boxed{\frac{\sqrt{2}}{2}(i-1)}$

$\boxed{k=2}$ $x = \left(\cos \frac{5}{4}\pi + i \sin \frac{5}{4}\pi\right) = -\frac{\sqrt{2}}{2} - i \frac{\sqrt{2}}{2} = \boxed{-\frac{\sqrt{2}}{2}(1+i)}$

$\boxed{k=3}$ $x = \left(\cos \frac{7}{4}\pi + i \sin \frac{7}{4}\pi\right) = \frac{\sqrt{2}}{2} - i \frac{\sqrt{2}}{2} = \boxed{\frac{\sqrt{2}}{2}(1-i)}$

$\boxed{\text{4 soluzioni complesse}}$

$x^2 = 2$

$x^2 = \rho^2 (\cos 2\alpha + i \sin 2\alpha)$

$2 = 2(1 + 0i) = 2(\cos 0 + \sin 0)$

$x = \sqrt{2} \left(\cos \frac{2k\pi}{2} + i \sin \frac{2k\pi}{2}\right)$ $\boxed{0 \leq k \leq 1}$

$\boxed{k=0}$ $x = \sqrt{2}(\cos 0 + i \sin 0) = \sqrt{2} \cdot (1 + i0) = \boxed{\sqrt{2}}$

$\boxed{k=1}$ $x = \sqrt{2}(\cos \pi + i \sin \pi) = \sqrt{2} \cdot (-1 + i0) = \boxed{-\sqrt{2}}$

$\boxed{\text{2 soluzioni reali}}$

(Infatti si poteva risolvere anche senza utilizzare numeri complessi)

$x^3 = 2$

$x^3 = \rho^3(\cos 3\alpha + i \sin 3\alpha)$

$2 = 2(1 + 0i) = 2(\cos 0 + i \sin 0)$

$x = \sqrt[3]{2}\left(\cos \frac{2k\pi}{3} + i \sin \frac{2k\pi}{3}\right) \quad \boxed{0 \leq k \leq 2}$

$\boxed{k=0} \quad x = \sqrt[3]{2}(\cos 0 + i \sin 0) = \sqrt[3]{2}(1+0) = \boxed{\sqrt[3]{2}}$

$\boxed{k=1} \quad x = \sqrt[3]{2}\left(\cos \frac{2}{3}\pi + i \sin \frac{2}{3}\pi\right) = \boxed{\sqrt[3]{2}\left(-\frac{1}{2} + i\frac{\sqrt{3}}{2}\right)}$

$\boxed{k=2} \quad x = \sqrt[3]{2}\left(\cos \frac{4}{3}\pi + i \sin \frac{4}{3}\pi\right) = \boxed{\sqrt[3]{2}\left(-\frac{1}{2} - i\frac{\sqrt{3}}{2}\right)}$

1 soluzione reale e 2 soluzioni complesse

$x^6 = -64$

$x^6 = \rho^6(\cos 6\alpha + i \sin 6\alpha)$

$-64 = 64(-1 + 0i) = 64(\cos \pi + i \sin \pi)$

$x = \sqrt[6]{64}\left(\cos \frac{\pi + 2k\pi}{6} + i \sin \frac{\pi + 2k\pi}{6}\right) \quad \boxed{0 \leq k \leq 5}$

$\boxed{k=0} \quad x = 2\left(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6}\right) = 2\left(\frac{\sqrt{3}}{2} + i\frac{1}{2}\right) = \cancel{2}\left(\frac{\sqrt{3}+i}{\cancel{2}}\right) = \boxed{\sqrt{3}+i}$

$\boxed{k=1} \quad x = 2\left(\cos \frac{\pi}{2} + i \sin \frac{\pi}{2}\right) = 2(0 + i) = \boxed{2i}$

$\boxed{k=2} \quad x = 2\left(\cos \frac{5}{6}\pi + i \sin \frac{5}{6}\pi\right) = 2\left(-\frac{\sqrt{3}}{2} + i\frac{1}{2}\right) = \cancel{2}\left(\frac{-\sqrt{3}+i}{\cancel{2}}\right) = \boxed{-\sqrt{3}+i}$

$\boxed{k=3} \quad x = 2\left(\cos \frac{7}{6}\pi + i \sin \frac{7}{6}\pi\right) = 2\left(-\frac{\sqrt{3}}{2} - i\frac{1}{2}\right) = \cancel{2}\left(\frac{-\sqrt{3}-i}{\cancel{2}}\right) = \boxed{-\sqrt{3}-i}$

$\boxed{k=4} \quad x = 2\left(\cos \frac{3}{2}\pi + i \sin \frac{3}{2}\pi\right) = 2(0 - i) = \boxed{-2i}$

$\boxed{k=5} \quad x = 2\left(\cos \frac{11}{6}\pi + i \sin \frac{11}{6}\pi\right) = 2\left(\frac{\sqrt{3}}{2} - i\frac{1}{2}\right) = \cancel{2}\left(\frac{\sqrt{3}-i}{\cancel{2}}\right) = \boxed{\sqrt{3}-i}$

6 soluzioni complesse