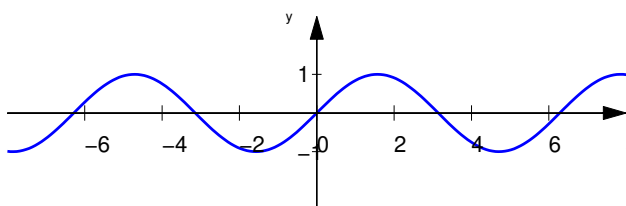


Corso di laurea INFLT-ETELT Cognomi (M-Z)

Il NUMERO della FILA è contenuto nel testo dell'esercizio numero 1 ed è il coefficiente davanti al logaritmo.

Fila 1

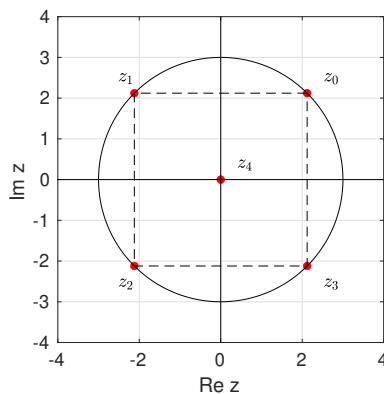
1. $\text{dom } f =] - 2, 0[\cup] 0, 2[;$
 $A =] - 2, -\sqrt{3}] \cup] 0, \sqrt{3}]$
2. $\text{dom}(f) = \mathbb{R}, \text{Im}(f) = [-1, 1];$
 $f(x) \leq 0 \forall x \in \mathbb{R} : \pi + 2k\pi \leq x \leq 2\pi + 2k\pi, \forall k \in \mathbb{Z}.$



3. Le soluzioni sono:

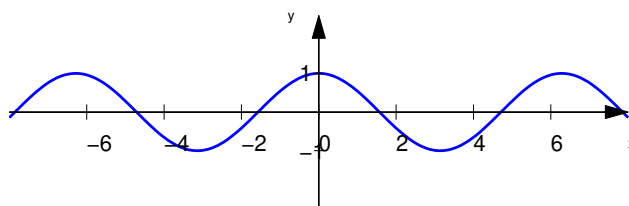
$$z_0 = 3e^{i\frac{\pi}{4}} = 3\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right), z_1 = 3e^{i\frac{3\pi}{4}} = 3\left(-\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right),$$

$$z_2 = 3e^{i\frac{5\pi}{4}} = -3\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right), z_3 = 3e^{i\frac{7\pi}{4}} = 3\left(\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2}i\right), z_4 = 0.$$



Fila 2

1. $\text{dom } f =] - 2, 0[\cup] 0, 2[;$
 $A =] - 2, -\sqrt{3}] \cup] 0, \sqrt{3}]$
2. $\text{dom}(f) = \mathbb{R}, \text{Im}(f) = [-1, 1];$
 $f(x) \leq 0 \forall x \in \mathbb{R} : \frac{\pi}{2} + 2k\pi \leq x \leq \frac{3\pi}{2} + 2k\pi, \forall k \in \mathbb{Z}.$



3. Le soluzioni sono:

$$z_0 = 5e^{i\frac{\pi}{4}} = 5\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right), z_1 = 5e^{i\frac{3\pi}{4}} = 5\left(-\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right),$$

$$z_2 = 5e^{i\frac{5\pi}{4}} = -5\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right), z_3 = 5e^{i\frac{7\pi}{4}} = 5\left(\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2}i\right), z_4 = 0.$$

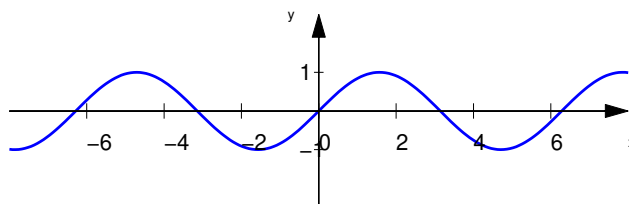
Fila 3

1. $\text{dom } f =]-2, 0[\cup]0, 2[;$

$$A =]-2, -\sqrt{3}] \cup]0, \sqrt{3}]$$

2. $\text{dom}(f) = \mathbb{R}, \text{Im}(f) = [-1, 1];$

$$f(x) \leq 0 \quad \forall x \in \mathbb{R} : \pi + 2k\pi \leq x \leq 2\pi + 2k\pi, \quad \forall k \in \mathbb{Z}.$$



3. Le soluzioni sono:

$$z_0 = 7e^{i\frac{\pi}{4}} = 7\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right), z_1 = 7e^{i\frac{3\pi}{4}} = 7\left(-\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right),$$

$$z_2 = 7e^{i\frac{5\pi}{4}} = -7\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right), z_3 = 7e^{i\frac{7\pi}{4}} = 7\left(\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2}i\right), z_4 = 0.$$

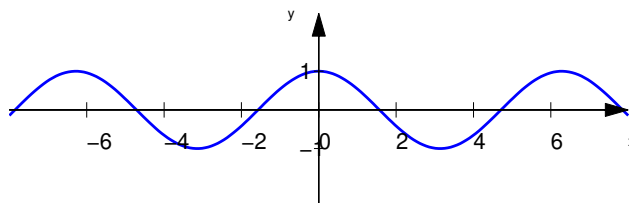
Fila 4

1. $\text{dom } f =]-2, 0[\cup]0, 2[;$

$$A =]-2, -\sqrt{3}] \cup]0, \sqrt{3}]$$

2. $\text{dom}(f) = \mathbb{R}, \text{Im}(f) = [-1, 1];$

$$f(x) \leq 0 \quad \forall x \in \mathbb{R} : \frac{\pi}{2} + 2k\pi \leq x \leq \frac{3\pi}{2} + 2k\pi, \quad \forall k \in \mathbb{Z}.$$



3. Le soluzioni sono:

$$z_0 = 9e^{i\frac{\pi}{4}} = 9\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right), z_1 = 9e^{i\frac{3\pi}{4}} = 9\left(-\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right),$$
$$z_2 = 9e^{i\frac{5\pi}{4}} = -9\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i\right), z_3 = 9e^{i\frac{7\pi}{4}} = 9\left(\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2}i\right), z_4 = 0.$$
