

1 Exercice n° 1

1(a)

$$\begin{aligned}Z &= \frac{(1-i)(z-i)}{z-1} \\Z &= \frac{(1-i)(-i-i)}{-i-1} \\Z &= \frac{-2i-2}{-i-1} \\Z &= \frac{(-2i-2)(-1+i)}{(-i-1)(-1+i)} \\Z &= \frac{2i+2+2-2i}{1-i+i+1} \\Z &= \frac{a}{2} \\Z &= 2\end{aligned}$$

(b)

$$\begin{aligned}\frac{(1-i)(z-i)}{z-1} &= -i \\(1-i)(z-i) &= -i(z-1) \\z-i-iz-1 &= -iz-i+i \\z-i-1 &= i \\z &= 1+2i\end{aligned}$$

(c)

