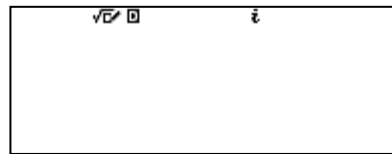
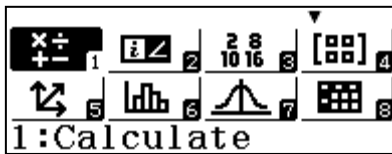




Nombres complexos (2). Operacions.

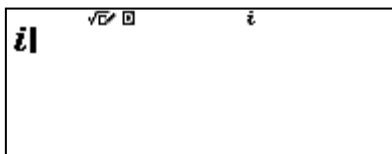
Obriu el menú de complexos:

MENU **2**



La tecla de la unitat imaginària $i = \sqrt{-1}$ es

ENG



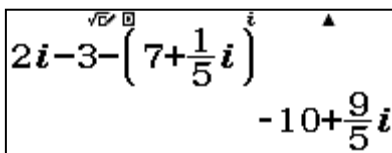
1.- Efectueu les següents operacions donant les solucions en forma binòmica i polar.

a) $(2i - 3) - \left(7 + \frac{1}{5}i\right) =$ b) $(2 - 3i)(-2 + 6i) =$ c) $\frac{2 - 3i}{-2 + 6i} =$

Solució:

a)

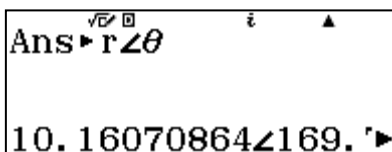
2 **ENG** **-** **3** **-** **(** **7** **+** **1** **÷** **5** **)** **-** **10** **+** **9** **÷** **5** **i** **ENG** **)** **=**



Aleshores, $(2i - 3) - \left(7 + \frac{1}{5}i\right) = -10 + \frac{9}{5}i$

Passeu a forma polar:

OPTN **▼** **1** **=**



Aleshores, $(2i - 3) - \left(7 + \frac{1}{5}i\right) = 10.1607_{169.7960^\circ}$.

b)

((2 - 3 ENG)) × ((- 2 + 6 ENG)) =

$$(2-3i) \times (-2+6i)$$

$$14+18i$$

Aleshores, $(2-3i)(-2+6i) = 14+18i$.

Passeu a forma polar:

OPTN (▼) 1 =

$$\text{Ans} \rightarrow r \angle \theta$$

$$2\sqrt{130} \angle 52.12501635$$

Aleshores, $(2-3i)(-2+6i) = 2\sqrt{130} \angle 52.1250^\circ$.

c)

((2 - 3 ENG)) (▼) (- 2 + 6 ENG) =

$$\frac{2-3i}{-2+6i}$$

$$-\frac{11}{20} - \frac{3}{20}i$$

Aleshores, $\frac{2-3i}{-2+6i} = -\frac{11}{20} - \frac{3}{20}i$.

Passeu a forma polar:

OPTN (▼) 1 =

$$\text{Ans} \rightarrow r \angle \theta$$

$$\frac{\sqrt{130}}{20} \angle -164.744881$$

Aleshores, $\frac{2-3i}{-2+6i} = \left(\frac{\sqrt{130}}{20}\right) \angle -164.7669^\circ$.

2.- Calculeu:

a) $(2-3i) + (-2+6i) =$ b) $(\sqrt{3}+2i) - (1-5i) =$ c) $(2i-3)\left(7+\frac{1}{5}i\right) =$

d) $(\sqrt{3}+2i)(1-5i) =$ e) $\frac{2-3i}{-2+6i} =$ f) $\frac{-3i}{2i+3} =$

g) $\frac{1}{\sqrt{2}-\sqrt{3}i} =$ h) $6_{60^\circ} + 2_{120^\circ} =$ i) $4_{60^\circ} \cdot 6_{120^\circ} =$

j) $\frac{6_{30^\circ}}{2_{120^\circ}} =$ k) $4_{\frac{\pi}{2}} \cdot 5_{\frac{\pi}{4}} =$ l) $(2_{\pi/6})^4 =$

Nota: Hem de tenir amb compte les unitats angulars.