

Exercice 13.

On donne les nombres complexes :

$$z_1 = -1 + 2i \text{ et } z_2 = 3 + 4i.$$

Déterminez la forme algébrique de :  $z_1 + z_2$ ,  $z_1 - z_2$ ,  $2z_1 - 3z_2$ ,  $z_1 \times z_2$ .

$$\begin{aligned} 1) z_1 + z_2 &= -1 + 2i + 3 + 4i \\ &= 2 + 6i \end{aligned}$$

$$\begin{aligned} 2) z_1 - z_2 &= -1 + 2i - (3 + 4i) \\ &= -1 + 2i - 3 - 4i \\ &= -4 - 2i \end{aligned}$$

$$\begin{aligned} 3) 2z_1 - 3z_2 &= 2(-1 + 2i) - 3(3 + 4i) \\ &= -2 + 4i - 9 - 12i \\ &= -11 - 8i \end{aligned}$$

$$\begin{aligned} 4) z_1 \times z_2 &= (-1 + 2i) \times (3 + 4i) \\ &= -3 - 4i + 6i + 8i^2 \\ &= -3 + 2i - 8 \\ &= -11 + 2i \end{aligned}$$