

Exercice 3.

Résoudre l'équation $2z - 3i = (z - 5)(1 + i)$.

$$2z - 3i = (z - 5)(1 + i)$$

$$2z - 3i = z + zi - 5 - 5i$$

$$2z = 3i + z + zi - 5 - 5i$$

$$2z - z - iz = 3i - 5 - 5i$$

$$z - iz = 3i - 5 - 5i$$

$$(1 - i)z = -5 - 2i$$

$$z = \frac{(-5 - 2i)(1 + i)}{(1 - i)(1 + i)}$$

$$z = \frac{-5 - 5i - 2i - 2i^2}{(1)^2 + (1)^2} \Leftrightarrow z = \frac{-5 - 7i - 2 \times (-1)}{2}$$

$$z = \frac{-3 - 7i}{2} \Leftrightarrow z = -\frac{3}{2} - \frac{7}{2}i$$

$\boxed{z = z}$