Условие:

Даны комплексные числа z_1, z_2. Найти

$z_1 + z_2, z_1 - z_2, z_1 \cdot z_2, \frac{z_1}{z_2}$, где $z_1 = 2 - 3i, z_2 = 5 - 4i$.

Решение:

$z_1 = 2 - 3i, z_2 = 5 - 4i \Rightarrow z_1 + z_2 = 2 - 3i + 5 - 4i = 7 - 7i,$

$z_1 - z_2 = 2 - 3i - 5 + 4i = -3 + i,$

$z_1 \cdot z_2 = (2 - 3i)(5 - 4i) = 10 - 8i - 15i + 12i^2 = -2 - 23i,$

$$\frac{z_1}{z_2} = \frac{2 - 3i}{5 - 4i} = \frac{(2 - 3i)(5 + 4i)}{(5 - 4i)(5 + 4i)} = \frac{10 + 8i - 15i - 12i^2}{25 - 16i^2} = \frac{22 - 7i}{41} = \frac{22}{41} - \frac{7}{41}i.$$