

Section 10.1, exercise 6a) Sketch the vectors z_1 , z_2 , $z_1 + z_2$, and $z_1 - z_2$.

$$z_1 = 3 + i, \quad z_2 = 1 + 4i$$

Section 10.1, exercise 14 Perform the calculation and express the result in the form $a + bi$:

$$i(1 + 7i) - 3i(4 + 2i)$$

Section 10.2, exercise 14 Perform the calculation and express the result in the form $a + bi$:

$$\frac{1 - 2i}{3 + 4i} - \frac{2 + i}{5i}$$

Section 10.3, exercise 3a) Express the complex number in polar form using its principal argument.

$$2i$$

Section 10.3, exercise 7d) Find all the roots and sketch them as vectors in the complex plane.

$$(i)^{\frac{1}{3}}$$