

ADDIZIONE

$$z_1 = 3 - 5i$$

$$z_2 = 7 + 14i$$

$$z_1 + z_2 = (7+3) + (-5+14)i = 10 + 9i$$

SOTTRAZIONE

$$z_1 - z_2 = (3-7) + [-5-14]i = -4 - 19i$$

$$(3-5i) - (7+14i)$$

MOLTIPLICAZIONE $\sqrt{-1} = i$

$$(1+i)(1-i) = 1^2 - \overset{\downarrow}{i^2} = 1 - (-1) = +2$$

$$\underline{(2-i)(3+2i)} = 6 + \underline{4i - 3i} - 2i^2 = 6 + i + 2 = \underline{8+i}$$

DIVISIONE

$$\frac{8i}{3i} = \frac{8}{3}$$

$$\frac{1+i}{2} = \frac{1}{2} + \frac{1}{2}i$$

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RAZIONALIZZAZIONE

$$\frac{1}{\sqrt{2}} \left(\frac{\sqrt{2}}{\sqrt{2}} \right) = \frac{\sqrt{2}}{2} ; \frac{1}{1+\sqrt{2}} \cdot \left(\frac{1-\sqrt{2}}{1-\sqrt{2}} \right) = \frac{1-\sqrt{2}}{1^2 - [\sqrt{2}^2]} = \frac{1-\sqrt{2}}{-1}$$

$$\frac{1}{1+i} \cdot \frac{1-i}{1-i} = \frac{1-i}{1^2 - (i^2)} = \frac{1-i}{2} = \underbrace{\left(\frac{1}{2} \right)}_a - \underbrace{\left(\frac{1}{2} \right)}_b i$$

$$\frac{1}{3i} \cdot \frac{i}{i} = \frac{i}{-3} = -\frac{1}{3}i \quad \begin{matrix} a=0 \\ b=-\frac{1}{3} \end{matrix}$$

$$\frac{2+i}{1-i} \cdot \frac{1+i}{1+i} = \frac{2+2i+i+i^2}{2} = \frac{1+3i}{2} = \underbrace{\left(\frac{1}{2} \right)}_a + \underbrace{\left(\frac{3}{2} \right)}_b i$$

$$\left(\frac{1}{2}, \frac{3}{2} \right)$$