

$$2i(i-1) + (\sqrt{3}-i) + (1+i)(1+i)$$

$$(2i^2 - 2i) + (\sqrt{3}-i) + (1+2i+i^2)$$

$$-2 + 2i + \sqrt{3} - i + 1 + 2i - 1$$

$$\sqrt{3} - 2 + 1 - 1 + 2i - i + 2i$$

$$\sqrt{3} - 2 + 3i$$

$$Z = (4+7i)(3-2i)$$

$$= 12 + 21i - 8i - 14i^2$$

$$= 12 + 13i + 14$$

$$= 26 + 13i$$

$$r = \sqrt{26^2 + 13^2} = 13\sqrt{5}$$

$$\theta = \tan^{-1}\left(\frac{13}{26}\right) = 26.56505118^\circ$$

$$13\sqrt{5} \angle 26.57^\circ$$