

$$\begin{aligned} \text{iv) } & (-5-2j)(-5-2j) - (2+5j) \\ & (25+10j+10j+4j^2) - (2+5j) \\ & (25+24j) - (2+5j) \\ & \boxed{23+19j} \end{aligned}$$

b)

$$\begin{aligned} 5x^2 &= -3x - 12 \\ 5x^2 + 3x + 12 &= 0 \end{aligned}$$

$$x = \frac{-3 \pm \sqrt{(3)^2 - 4(5)(12)}}{2(5)}$$

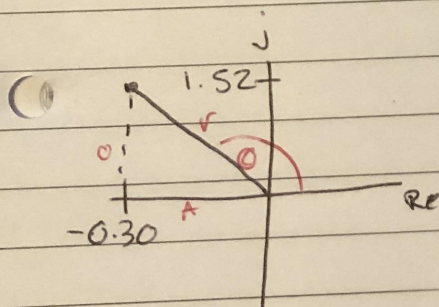
$$x = \frac{-3 \pm \sqrt{9 - 240}}{10}$$

$$x = \frac{-3 \pm \sqrt{-231}}{10}$$

$$x = \frac{-3 \pm 15.20j}{10}$$

$$x = \frac{-3 + 15.20j}{10} \quad x = \frac{-3 - 15.20j}{10}$$

$$x = -0.30 + 1.52j \quad x = -0.30 - 1.52j$$



$$r^2 = 0.30^2 + 1.52^2$$

$$r = \sqrt{0.09 + 2.31}$$

$$r = \sqrt{2.22}$$

$$\boxed{r = 1.49}$$

$$\tan \theta = \frac{1.52}{-0.30}$$

$$\theta = \tan^{-1} \left(\frac{1.52}{-0.30} \right)$$

$$\theta = \boxed{78.84^\circ}$$

$$\theta = 180^\circ - 78.84^\circ$$

$$\theta = \boxed{101.16^\circ}$$

$$PF = \boxed{1.49(\cos 101.16^\circ + j \sin 101.16^\circ)}$$