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b

$$12x^2 + 5x = -13$$

$$12x^2 + 5x + 13 = 0$$

$$x = \frac{-5 \pm \sqrt{(5)^2 - 4 \cdot (12) \cdot (13)}}{2 \cdot 12}$$

$$x = \frac{-5 \pm \sqrt{25 - 624}}{24}$$

$$x = \frac{-5 \pm \sqrt{-599}}{24} \rightarrow x = \frac{-5 \pm \sqrt{24.47}}{24}$$

$$+x = 0.81$$

$$-x = -1.23$$

$$-1.23 + 0.81j$$

$$-1.23 - 0.81j$$

$$r = 1.47 \quad \theta = 33.37$$

$$r = 1.47 \quad \theta = 326.63$$

$$1.47(\cos 33.37 + j \sin 33.37)$$

$$1.47(\cos 326.63 + j \sin 326.63)$$

$$c) (4 + 9j)^4$$

$$r^n (\cos n\theta + j \sin n\theta)$$

$$r = \sqrt{5^2 + 9^2} \therefore r = \sqrt{4^2 + 9^2} = 9.85$$

$$\theta = \tan^{-1}(9/4) \therefore \tan^{-1}(9/4) = 66.03$$

$$9.85^4 \times (\cos(4 \times 66.03) + j \sin(4 \times 66.03))$$

$$9413.37 \cdot \cos(264) + j \sin(264)$$

$$9413.37 \sin 264 = j \sin(264)$$

$$= -970.89 - 9363.17j$$