

1:00pm

M4X00391

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(v). $(z_1)^2 - z_2 - z_3$

$$(7+5j)(7+5j) - (3-7j) - (-2+6j)$$

$$\therefore = (49 + 35j + 35j + 25j^2) - (3-7j) - (-2+6j)$$

$$\therefore = (24 + 70j) - (3-7j) - (-2+6j)$$

$$\therefore = 21 + 71j$$

$$= 23 + 71j$$

(b) $12x^2 + 5x = -13$

$$\underset{a}{12}x^2 + \underset{b}{5}x + \underset{c}{13} = 0$$

$$\text{Formula} = x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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

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

$$\therefore x = \frac{-5 + \sqrt{25 - 624}}{24} \quad y = \frac{-5 + \sqrt{599}}{24} = 0.811$$

$$r = \sqrt{x^2 + y^2}$$

$$\therefore x = \frac{-5 - \sqrt{599}}{24} = -1.23$$

$$\theta = \tan^{-1} \left(\frac{y}{x} \right)$$

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