

Αυτοεξ

$$1) \text{ i) } 2\alpha + 2\beta = 2(\alpha + \beta)$$

$$\text{ii) } 5x - 5y = 5(x - y)$$

$$\text{iii) } 5x + 10 = 5(x + 2)$$

$$\text{iv) } 12\alpha^2\beta - 6\alpha\beta = 6\alpha\beta(2\alpha - 1)$$

$$\text{v) } 7\alpha - 35\beta + 21\gamma = 7(\alpha - 5\beta + 3\gamma)$$

$$\text{vi) } k^2\lambda + \lambda^2k + \mu k\lambda = k\lambda(k + \lambda + \mu)$$

$$2) \text{ i) } \underbrace{2(\alpha + \beta)}_{\omega} + \underbrace{\gamma(\alpha + \beta)}_{\omega} = 2\omega + \gamma\omega = \omega(2 + \gamma) = (\alpha + \beta)(2 + \gamma)$$

$$\text{ii) } \underbrace{(x + y)}_{\omega} - \underbrace{(x + y)\sqrt{3}}_{\omega} = \omega - \omega\sqrt{3} = \omega(1 - \sqrt{3}) = (x + y)(1 - \sqrt{3})$$

$$\text{iii) } 5x(x - 4) - 20(4 - x) = 5x \underbrace{(x - 4)}_{\omega} + 20 \underbrace{(x - 4)}_{\omega} = 5x\omega + 20\omega = \\ = 5\omega(x + 4) = 5(x - 4)(x + 4)$$

$$\text{iv) } (x + 1) \underbrace{(x - 2)}_{\omega} - 5 \underbrace{(x - 2)}_{\omega} = (x + 1)\omega - 5\omega = \omega(x + 1 - 5) = \\ = \omega(x - 4) = (x - 2)(x - 4)$$

$$\text{v) } (3k - 2\lambda)x^2 - (x + 1)(2\lambda - 3k) = \underbrace{(3k - 2\lambda)}_{\omega}x^2 + (x + 1) \underbrace{(3k - 2\lambda)}_{\omega} = \\ = \omega x^2 + (x + 1)\omega = \omega(x^2 + x + 1) = (3k - 2\lambda)(x^2 + x + 1)$$

$$3) \text{ i) } \alpha\gamma + \beta\gamma + \alpha + \beta = \underbrace{\gamma(\alpha + \beta)}_{\omega} + \underbrace{(\alpha + \beta)}_{\omega} = \gamma\omega + \omega = \omega(\gamma + 1) = \\ = (\alpha + \beta)(\gamma + 1)$$

$$\text{ii) } 21x^2y - 4y - 12x + 7xy^2 = 21x^2y + 7xy^2 - 4y - 12x \\ = 7xy(3x + y) + 4(-y - 3x) = 7xy(3x + y) - 4(y + 3x) = \\ = 7xy \underbrace{(3x + y)}_{\omega} - 4 \underbrace{(3x + y)}_{\omega} = 7xy\omega - 4\omega = \omega(7xy - 4) =$$