

4833-41

$$\alpha) \Delta = (-5)^2 - 8(-5) = 65$$

$$\beta) 20 = 4x^2 + 20x + 25 - 8x \Leftrightarrow$$

$$4x^2 + 12x + 5 = 0 \quad \Leftrightarrow$$

$$\Delta = 144 - 80 = 64 \quad x = \frac{-12 \pm 8}{8} \quad \Leftrightarrow$$

$$x = -\frac{1}{2} \quad \text{ή} \quad x = -\frac{5}{2}$$

$$\gamma) \text{i) Για } \Delta = 5 \rightarrow 4x^2 + 12x + 20 = 0 \text{ αδύνατη}$$

$$\Delta = 144 - 320 < 0$$

$$\text{ii) Πρέπει } \Delta \geq 0 \Leftrightarrow 12^2 - 4 \cdot 4(25 - \Delta) \geq 0$$

$$\Leftrightarrow 144 - 400 + 16\Delta \geq 0 \Leftrightarrow$$

$$16\Delta \geq 256 \Leftrightarrow \boxed{\Delta \geq 16}$$