



$$y = (x^2 + 5x^2 + 4)(x^2 + 5x^2 + 6)$$

$$x^2 + 5x^2 + 4 = t$$

$$\Rightarrow y = 2t^2 + 2t = (t+1)^2 - 1$$

$$t \geq 4 \rightarrow (t+1)^2 \geq 25 \rightarrow y \geq 24$$