Q4, 5, 6

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4.

a.

False

$$2x^4 \leq c(x^3 + 3x + 2)$$

$$2x \leq c + c(\frac{3}{x^2} + \frac{2}{x^3})$$

$$2x - c(\frac{3}{x^2} + \frac{2}{x^3}) \leq c$$

as x $\to \infty$, left side $\to \infty$ but right side is constant
$2x^4$ grows faster than $x^3 + 3x + 2$

b.

True

$$4x^3 + 2x^2 \times \log x + 1 \leq$$