1. The limit below has been computed using the limit laws. Indicate which limit law is used at each step.

\[
\lim_{x \to 4} 3x^2 - \sqrt{x} + \frac{x^2 - 10}{x + 2} = \lim_{x \to 4} 3x^2 - \lim_{x \to 4} \sqrt{x} + \lim_{x \to 4} \frac{x^2 - 10}{x + 2} \\
= 3 \lim_{x \to 4} x^2 - \lim_{x \to 4} \sqrt{x} + \lim_{x \to 4} \frac{x^2 - 10}{x + 2} \\
= 3 \lim_{x \to 4} x^2 - \lim_{x \to 4} \sqrt{x} + \frac{\lim_{x \to 4} x^2 - 10}{\lim_{x \to 4} x + 2} \\
= 3 \cdot 4^2 - \sqrt{4} + \frac{6}{6} \\
= 47
\]

2. The limit laws for the next computation have been given to you. Fill in each step of the computation.

\[
\lim_{x \to -3} \frac{3x^2 - 7x + 13}{x + 4} = \text{by Law 5} \\
= \text{by Laws 1, 2, 3} \\
= \text{by Laws 7, 8, 9} \\
= 61 \text{ simplification.}
\]

3. Following the models above, compute the limits:

(a) \[\lim_{t \to -1} (t^4 - 3t)(t^2 + 5t + 3)\]

(b) \[\lim_{\theta \to 0} \frac{\cos^4 \theta}{5 + 2\theta^3}\]

(c) \[\lim_{u \to -2} \sqrt{u^4 + 3u + 6}\]

4. What is wrong with the following equation? Explain your answer.

\[
\frac{x^2 + x - 6}{x - 2} = x + 3
\]