



Quiz 1      Calculus 1      9/21/2015


1. Fill each blank below with a limit law justifying that equality. Each blank is worth 1 point.

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$$\lim_{x \rightarrow 2} 5x^2 - 3 = \lim_{x \rightarrow 2} (5x^2) - \lim_{x \rightarrow 2} 3$$

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$$= 5 \lim_{x \rightarrow 2} (x^2) - \lim_{x \rightarrow 2} 3$$

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$$= 5 \left( \lim_{x \rightarrow 2} x \right)^2 - \lim_{x \rightarrow 2} 3$$

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$$= 5(2)^2 - \lim_{x \rightarrow 2} 3$$

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$$= 5 \cdot 4 - 3$$
$$= 20 - 3$$
$$= 17$$

2. [5 pts] Evaluate the following limit, **carefully identifying which limit law you use at each step**:

$$\lim_{x \rightarrow 2} \sqrt{9 + 2x^3}$$