

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

↙ Difference Rule for limits

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

↙ Constant multiple rule for limits

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

Excellent!

↙ Power Rule for limits

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

↙ Rule x for limits

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

↙ Constant rule for limits

$$= 3 \cdot 4 - 5$$

$$= 12 - 5$$

$$= 7$$