MATH 30b - Orrison Limits September 6th, 2016

Homework Set 2 - $\{1, 2, 3, 4, 5\}$

Use an $\epsilon - \delta$ proof to prove that $\lim_{x \to 5} (2x + 5) = 15$.

Use an $\epsilon - \delta$ proof to prove that $\lim_{x \to -5} (-2x - 20) = -10$.

Use an $\epsilon - \delta$ proof to prove that $\lim_{x \to 0} x^2 \sin \frac{1}{x} = 0$.

Use an $\epsilon - \delta$ proof to prove that $\lim_{x \to \pi} (x^2 - 2\pi x) = -\pi^2$.

Prove that if f(x) = x for rational x, and if f(x) = -x for irrational x, then $\lim_{x \to a} f(x)$ does not exist for $a \ne 0$.

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