Ignatian Pedagogical Paradigm
Lesson Plans

Context
Experience
Reflection
Action
Evaluation

Lesson Title **Discipline** **Contributor**	L'Hopital's Rule Calculus David Wright – Jesuit High School, New Orleans
Context	Create a desire to use precise mathematical methods in computing indeterminate limits by re-visiting the limits computed earlier in the year using intuitive or graphical analysis (called cowboy math).
Experience	Computation of limits of rational algebraic expressions based on the intuition of relative rates and strength of growth of the numerator and denominator. Exs. $\lim_{x\to\infty} \frac{3x^4+4x^2+5}{x^6-x+8} = 0$ due to the dominance of the higher power of the denominator in the "race" to ∞. $\lim_{x\to\infty} \frac{5x^3-x}{3-7x^3} = \frac{-5}{7}$ due to relative equality of the dominating powers of the numerator and denominator. How is the $\lim_{x\to\infty}(1+\frac{1}{n})^n = e$ computed from Pre-Calculus classes?
Reflection	How does the precise mathematics of L'Hopital's Rule reflect the intuitive analysis of earlier computations? Why does L'Hopital's Rule fail when it is not an indeterminate?
Action	Discovering and perfecting methods of calculation based on rewriting, simplifying, and logarithmic L'Hopital when the traditional applications fail to produce a result.
Evaluation	Appreciation of the "power" acquired with this procedure and the recognition that it is not always the only or best way of calculation. Execution of a variety of different types of limit calculations in a testing mode.