

Name: _____

Date: _____

Learning Goal 2.1

Finite limits and continuity.

We will apply these methods to **four** different types of limits:

- 1.
- 2.
- 3.
- 4.

Example Compute the value of the following limits.

a. $\lim_{x \rightarrow -2} 3x^2 + 5x - 9$

b. $\lim_{x \rightarrow 1} \frac{6 - 3z + 10x^2}{2x^4 + 7x^3 + 1}$

c. $\lim_{x \rightarrow 1} \frac{x^2 + 1}{x - 1}$

d. $\lim_{x \rightarrow 1} \frac{x^2 + 1}{x - 1}$

Undefined vs. Indeterminate

e. $\lim_{x \rightarrow 2} \frac{x^2 + 4x - 12}{x^2 - 2x}$

f. $\lim_{x \rightarrow 0} \frac{2(-3 + x)^2 - 18}{x}$

g. $\lim_{x \rightarrow 0} \frac{\sqrt{x^2 + 9} - 3}{x^2}$

The Squeeze Theorem

Example Evaluate.

$$\lim_{x \rightarrow 0} x^2 \cos\left(\frac{1}{x}\right)$$