

Limits “Boot Camp” for Calculus

- What is a limit?
- One-sided limits
- **Properties of limits**
- Calculating limits
- Squeeze Theorem
- Infinite Limits
- Limits at Infinity
- Continuity
- Important limits

Example: $\lim_{x \rightarrow 2} 5x^2 =$

$$\lim_{x \rightarrow a} cf(x) =$$

Example: $\lim_{x \rightarrow 2} [x^2 + \sin(x\pi) - \cos(x\pi)] =$

$$\lim_{x \rightarrow a} [f(x) \pm g(x)] =$$

Example: $\lim_{x \rightarrow -1} [x^2 \cos(x\pi)] =$

$$\lim_{x \rightarrow a} [f(x) \cdot g(x)] =$$

Example: $\lim_{x \rightarrow 3} \frac{(x+1)^2}{\sin\left(\frac{x\pi}{2}\right)} =$

$$\lim_{x \rightarrow a} \frac{f(x)}{g(x)} =$$

Example: $\lim_{x \rightarrow 1} \cos^5(x\pi) =$

$$\lim_{x \rightarrow a} [f(x)]^n =$$

Example: $\lim_{x \rightarrow \pi} 12 =$

$$\lim_{x \rightarrow a} c =$$

Given. $\lim_{x \rightarrow 5} f(x) = -1$ $\lim_{x \rightarrow 5} g(x) = 3$

Find:

$$\lim_{x \rightarrow 5} 6f(x) =$$

$$\lim_{x \rightarrow 5} [2f(x) + 3g(x)] =$$

$$\lim_{x \rightarrow 5} (f(x)g(x))^2 =$$

$$\lim_{x \rightarrow 5} \frac{3+f(x)}{g(x)} =$$