

Precalculus Honors

Introduction to Calculus



_____ Date _____ Period _____

Warm-Up #1

Lesson 10.1: Intro to Limits

Use the graph of $y = f(x)$ shown at right, to find the limit, if it exists.

1A. $\lim_{x \rightarrow -2^-} f(x) =$	1B. $\lim_{x \rightarrow -2^+} f(x) =$
1C. $\lim_{x \rightarrow -2} f(x) =$	1D. $\lim_{x \rightarrow 0^+} f(x) =$
2A. $\lim_{x \rightarrow 2^+} f(x) =$	2B. $\lim_{x \rightarrow 2^-} f(x) =$
3. State any points of discontinuity in the graph.	

Warm-Ups

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PRECALCULUS CURRICULUM

Scope and Sequence

Unit 10: Introduction to Calculus

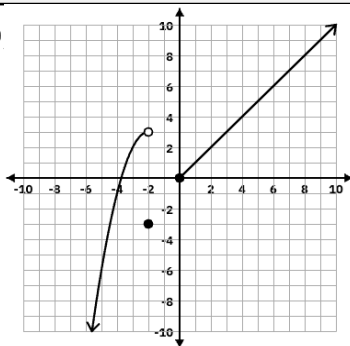
Lesson	Skills & Learning Objectives
[10.1] Limits - A Graphical Approach	☐ Find one-sided limits ☐ Find general limits ☐ Finding limits by tables, graphically, and numerically
[10.2] Finding Limits Analytically	☐ Evaluate limits using substitution ☐ Evaluate limits using algebraic methods ☐ Evaluate limits using special trig functions
[10.3] Limits at Infinity and Continuity	☐ Apply the rules of continuity ☐ Find vertical asymptotes using limits ☐ Find horizontal asymptotes using limits
[10.4] The Derivative and Tangent Lines	☐ Find slope using the limit process ☐ Find the derivative at a point ☐ Use the difference quotient to find derivative
[10.5] Derivatives and the Power Rule	☐ Use basic rules to find derivatives ☐ Rewrite expressions to behave as powers to find derivatives using the power rule ☐ Find derivatives of negative and fraction powers

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Lesson 10.1: Intro to Limits

Warm-Up # 1

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1A. $\lim_{x \rightarrow -2^-} f(x) =$

1B. $\lim_{x \rightarrow -2^+} f(x) =$

1C. $\lim_{x \rightarrow -2} f(x) =$

1D. $\lim_{x \rightarrow 0^+} f(x) =$

2A. $\lim_{x \rightarrow 2^+} f(x) =$

2B. $\lim_{x \rightarrow 2^-} f(x) =$

3. State any points of discontinuity in the graph.

2C. $\lim_{x \rightarrow 2} f(x) =$

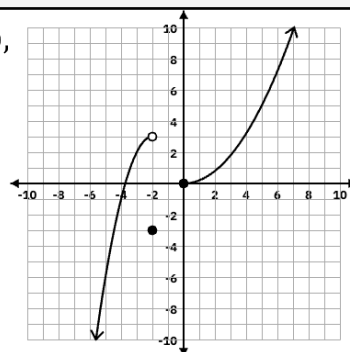
2D. $f(-2) =$

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Lesson 10.1: Intro to Limits

Warm-Up # 2

Use the graph of $y = f(x)$, shown at right, to find the limit, if it exists.



1A. $\lim_{x \rightarrow -2^-} f(x) =$

1B. $\lim_{x \rightarrow -2^+} f(x) =$

1C. $\lim_{x \rightarrow -2} f(x) =$

1D. $\lim_{x \rightarrow 0^+} f(x) =$

2A. $\lim_{x \rightarrow 2^+} f(x) =$

2B. $\lim_{x \rightarrow 2^-} f(x) =$

3. State any points of discontinuity in the graph.

2C. $\lim_{x \rightarrow 2} f(x) =$

2D. $f(-2) =$

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Lesson 10.2: Finding Limits Analytically

Warm-Up # 1

1. $\lim_{x \rightarrow 4} \sqrt{x^2 + 3x + 4}$

2. $\lim_{x \rightarrow 3} \frac{3x^2 - 8x - 3}{x^2 + 4x - 21}$

3. $\lim_{\theta \rightarrow \frac{\pi}{3}} \theta^2 \cos(\theta)$

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Lesson 10.2: Finding Limits Analytically

Warm-Up # 2

1. $\lim_{x \rightarrow 3} (x + 1)^{\frac{4}{3}}$

2. $\lim_{x \rightarrow 2} \frac{2x^2 - 11x + 5}{x^2 + x - 30}$

3. $\lim_{\theta \rightarrow \frac{\pi}{4}} \theta^2 \sin(\theta)$

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Lesson 10.5: Derivatives and The Power Rule

Warm-Up # 1

1. Find the derivative for each of the following using the power rule.

$$f(x) = 4x^3 - 2x^2 + 3x - 7$$

2. $g(x) = (3x + 5)(2x - 4)$

3. $h(x) = 5x - 2\sqrt{x}$

4. $y = \frac{7x^4 + 6x^3 - 5x^2 + 2x - 3}{x}$

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Lesson 10.5: Derivatives and The Power Rule

Warm-Up # 2

1. Find the derivative for each of the following using the power rule.

$$f(x) = 8x^3 - 4x^2 + 2x + 6$$

2. $g(x) = (3x - 4)(5x + 3)$

3. $h(x) = 6x - 3\sqrt{x}$

4. $y = \frac{8x^4 + 2x^3 + 4x^2 + x - 5}{x}$