Math 1431

Section 16679

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Questions

Popper 04

1. Find the limit: $\lim_{x \to 2} \frac{x^2 - 4}{x^2 - 3x + 2}$

Popper 04

2. Find the limit: $\lim_{x \to 1} \dfrac{x^2 - 4}{x^2 - 3x + 2}$

Popper 04

3. Find $\lim_{x\to\infty} \dfrac{3x^2 - 7x + 1}{1 - x^2}$

Test 1 Review

Problems from review sheet:

If f and g are differentiable and c is a scalar, then $f+g$, $f-g$ and $(c \cdot f)$ are differentiable. Furthermore,

Section 2.2 - Algebraic Properties of the Derivative

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The derivative of the sum is the sum of the derivatives:

$$\frac{d}{dx}\left(f(x)+g(x)\right)=\frac{d}{dx}f(x)+\frac{d}{dx}g(x)$$

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And the derivative of any scalar times a function is the scalar times the derivative of the function:

$$\frac{d}{dx}\left(c \cdot f(x)\right)=c \cdot \frac{d}{dx}f(x)$$

Examples:

1. $\frac{d}{dx} 8 =$

2. $\frac{d}{dx} x =$

3. $\frac{d}{dx}(5x) =$

4. $\frac{d}{dx}(5x+2) =$

The Power Rule:

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Examples:

1. $\dfrac{d}{dx}(x^3) =$

2. $\dfrac{d}{dx}(x^5 - x^2) =$

3. $\dfrac{d}{dx}(3x^4 + 2x^3 - 4x) =$

More Examples: Find the derivative of each:

4. $f(x) = \sqrt{x}$

5. $f(x) = x^{9/7} + x^{5/7}$

6. $y = \dfrac{1}{x^2}$

Popper 04

4. Find the derivative of $f(x) = 3x^2 + \sqrt{x} + x$.

Popper 04

5. $f(x) = 6x^2 - 2x + 1, \;\; f'(x) =$