Math 1431

Section 16679

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10/10/19

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Questions

One Absolute Extreme Problem

Find all absolute extreme of $f(x) = x^3 - 2x^2 - 7x + 1$ on $[-2, 4]$.

Popper 12

1. If $y = 7$ is a horizontal asymptote for a rational function, which of the following is true?

Popper 12

2. Find and classify the extreme values for $f(x) = x^2 + \dfrac{1}{x}$.

Popper 12

3. Let $f(x) = 3x - 1$. The point $(0, -1)$ is

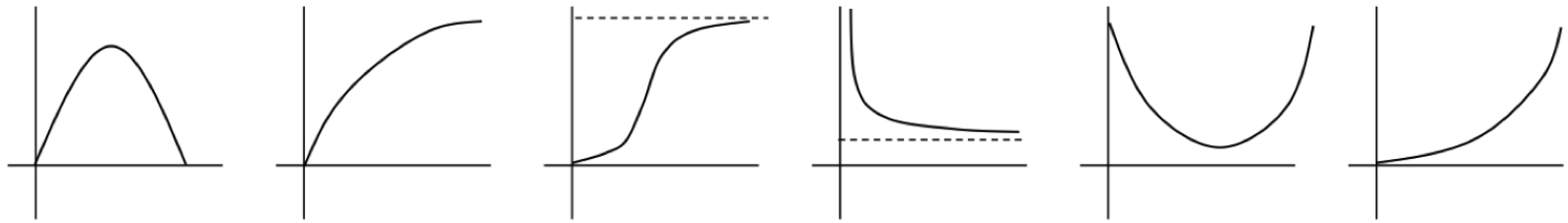
Popper 12

4. Let $f(x)$ be a polynomial function with $x = -2$ as a critical number. If $f''(-2) < 0$ then the point $(-2, f(-2))$ is

Section 3.6 - Curve Sketching

For the given functions, determine:

A. B. C. D. E. F.



a) Which functions have a positive first derivative for all x?

b) Which functions have a negative first derivative for all x?

c) Which functions have a positive second derivative for all x?

d) Which functions have a negative second derivative for all x?

Section 3.6 - Curve Sketching

Graph $f(x) = \dfrac{2x}{x^2+1}$

Section 3.6 - Curve Sketching

Graph $f(x) = \dfrac{x^2}{x^2 - 1}$

Section 3.6 - Curve Sketching

What can you say about a function with these properties:

1. The domain is all real numbers except 3 and -3.
2. The function has vertical asymptotes at $x = 3$ and $x = -3$.
3. The function is symmetric about the y-axis
4. $\lim_{x \to \infty} f(x) = -1$
5. $f(0) = 0, f(2) = 0, f(4) = 0$
6. $f'(x) < 0$ for $0 < x < 1$ and $x > 3$
7. $f'(x) > 0$ for $1 < x < 3$
8. $f''(x) < 0$ for $0 < x < 1/2$