

Calculus 1

Name _____

Worksheet - 1st and 2nd Derivative Tests (2) Block ____ Date _____

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

$f'(x) =$ _____

$f''(x) =$ _____

Max: _____

Zeros: _____

Min: _____

C. U. _____

C. D. _____

C. D. _____

$f(x)$: _____

Point(s) of Inflection: _____

$f'(x)$: _____

$$f(x) = x^4 - 8x^3$$

$$f'(x) = 4x^3 - 24x^2$$

$$\text{Zeros: } x = 0, 6$$

$$\text{I.C. } (6, \infty)$$

$$\text{D.C. } (-\infty, 0) \cup (0, 6)$$

$$\text{Max(s): none}$$

$$\text{Min(s): } (6, -432)$$

$$f''(x) = 12x^2 - 48x$$

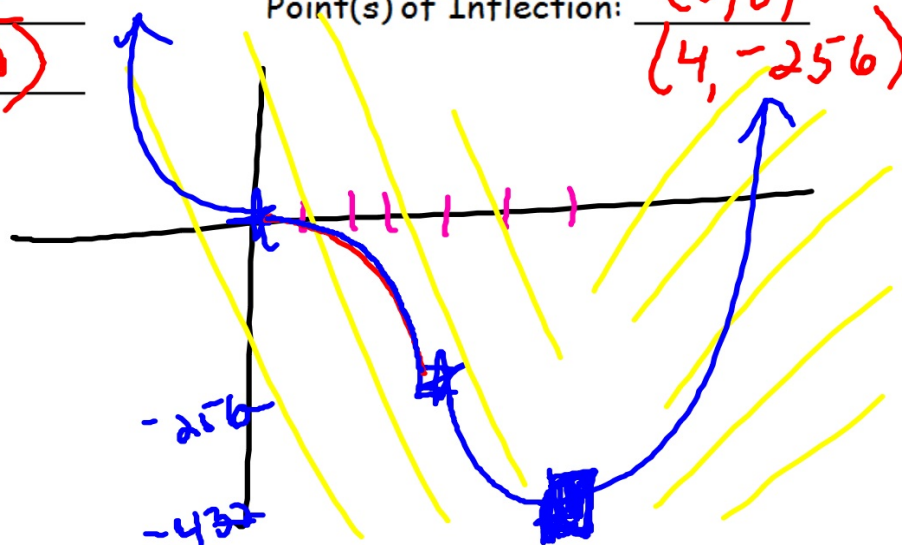
$$\text{Zeros: } x = 0, 4$$

$$\text{C. U. } (-\infty, 0) \cup (4, \infty)$$

$$\text{C. D. } (0, 4)$$

$$\text{Point(s) of Inflection: } (0, 0)$$

$$(4, -256)$$



s 1

Name _____

Sheet - Criteria Graphing (A)

Block _____ Date _____

Draw a graph of the function from the given information.

continuous.

$$f(-3) = -3, \quad f(3) = 2,$$

$$\text{intercepts} = 0.6$$

$$f'(3) = f'(3) = 0$$

$$f'(x) > 0 \text{ for } (-\infty, -4) \cup (-4, 3)$$

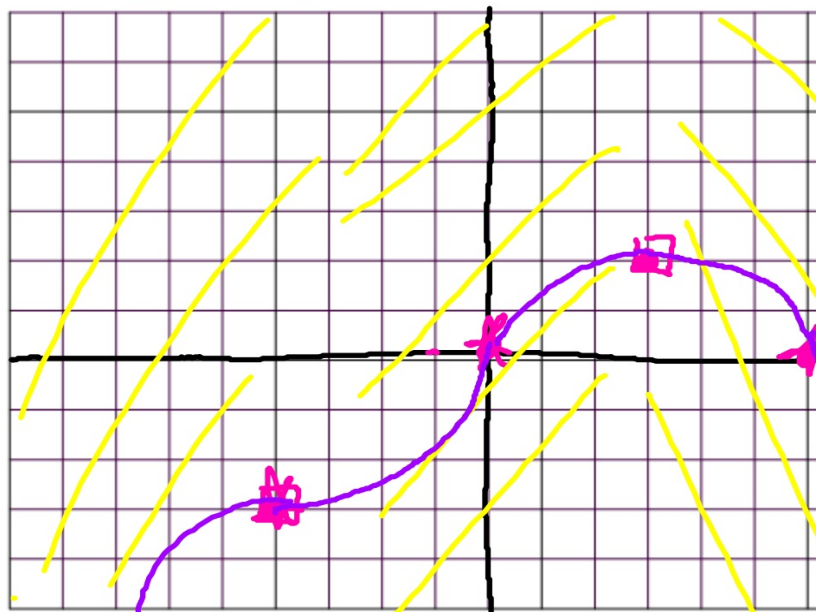
$$f'(x) < 0 \text{ for } x > 3$$

$$f''(0) = f''(6) = 0$$

$$f''(x) < 0 \text{ for } x < -4 \cup (0, 6)$$

$$f''(x) > 0 \text{ for } (-4, 0) \cup (6, \infty)$$

$$f''(x) = -2$$



State the extreme values and their classification.

~~$f(2) = 5, f(5) = 0, f(7) = -2, f(9) = 0$~~

~~$f'(7) = 0, f'(4) = \text{undefined}$~~

~~$f''(9) = 0, f''(4) = \text{undefined}$~~

~~$f''(9) = 0, f''(4) = \text{undefined}$~~

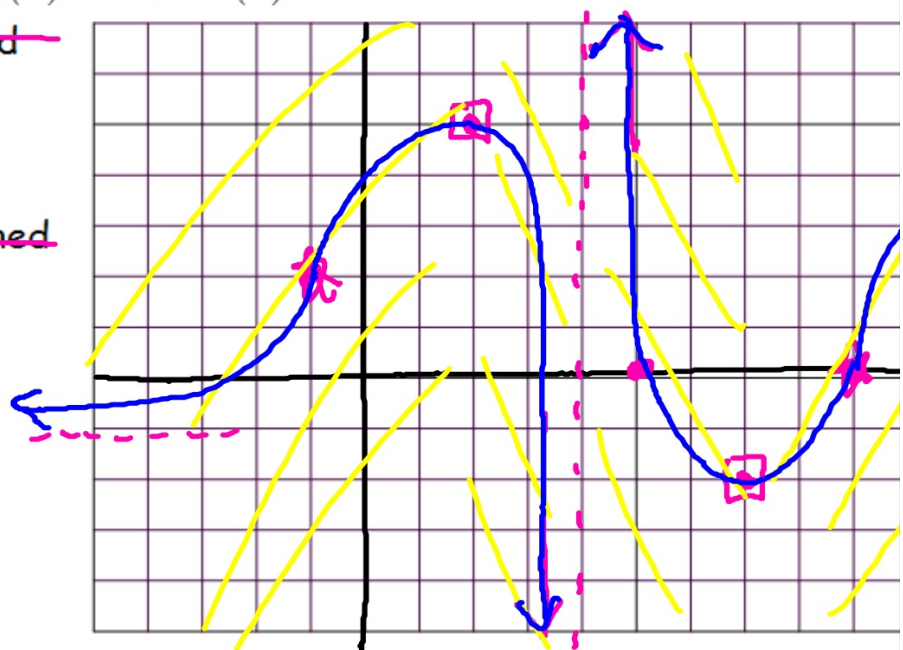
~~$f''(9) = 0, f''(4) = \text{undefined}$~~

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State the extreme values and their classification

