

Mathematics 122

Quiz #22

Name: _____

Key

You must show your work to get full credit.

Let

$$f(x) = x^3 - 12x + 1.$$

2 pts (1) Find the critical points of $f(x)$.

Solve

Critical Points = -2, 2

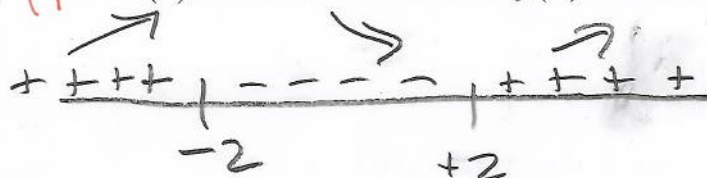
$$f'(x) = 3x^2 - 12 = 0$$

$$3(x^2 - 4) = 0$$

$$3(x-2)(x+2) = 0$$

$$x = 2, -2$$

1 pt (2) On what interval is $f(x)$ decreasing?



$$f'(x) = 3(x-2)(x+2)$$

or $-2 < x < 2$

$(-2, 2)$ or $-2 < x < 2$

1 pt (3) What are the local maximizers of $f(x)$

$x = +2$

1 pt (4) What are the local minimizers of $f(x)$

$x = -2$