

Calculus Warm Up

day after 5.2

Use the analytic method to find increasing and decreasing intervals.

$$f(x) = \frac{1}{3}x^3 - \frac{1}{2}x^2 - 2x$$

a)

d)

b)

e)

c)

Calculus Warm Up

day after 5.2

Use the analytic method to find increasing and decreasing intervals.

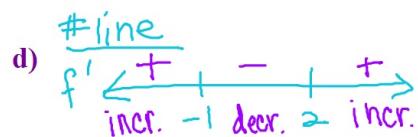
$$f(x) = \frac{1}{3}x^3 - \frac{1}{2}x^2 - 2x$$

a) Domain
 $(-\infty, \infty)$

b) $\frac{dy}{dx}$

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

c) $f' = 0$ $f' = \text{undef.}$
 $0 = x^2 - x - 2$ never
 $0 = (x-2)(x+1)$
 $x = 2, -1$



e) Answer
f is increasing $(-\infty, -1) (2, \infty)$ b/c $f' > 0$
f is decreasing on $(-1, 2)$ b/c $f' < 0$