Daily Grade #2

Name _____

Find the absolute maximum and absolute minimum vales of the function

$$f(x)=2x^3+3x^2-12x$$

on the interval [0,2].

Find critical points on $[0,2]$:

$f'(x) = 6x^2+6x-12 = 6(x^2+x-2)$

$= 6(x-1)(x+2) = 0$

critical points: $x=1$ belongs to $[0,2]$; $x=-2$ doesn't belong to $[0,2]$

$f(1) = 2+3-12 = \boxed{-7}$

$f(0) = \boxed{0}$

$f(2) = 2\cdot 8+3\cdot 4-12\cdot 2 = 16+12-24 = \boxed{4}$

abs. max value is 4

abs. min value is -7.