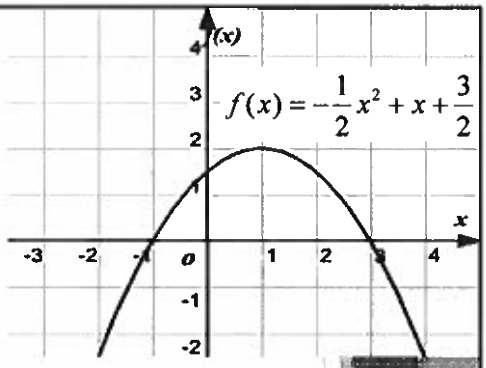
Unit 5 ~ Day 9

Test Review

Warm Up:

1. Find f'(x) at the zeros of the function.

2. Find f'(x) at the vertex of the function.



3. A an object is shot straight up into the air and its position is represented by the equation $s(t) = 46t - 1.4t^2$ where t is in seconds.

a. Find the velocity and acceleration function.

b. Find when the object is at rest (v = 0).

zeros: $x = -1, 3$

$f'(x) = -x + 1$

$f'(-1) = -(-1) + 1 = 2$ or

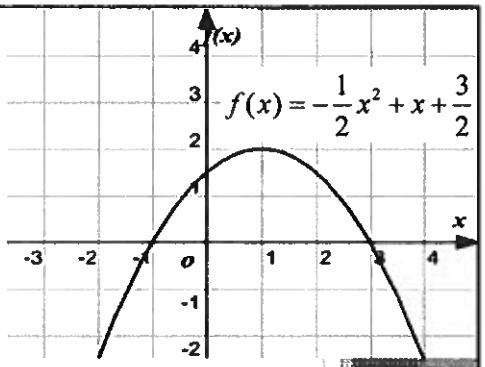
$f'(3) = -3 + 1 = -2$

$f'(1) = -1 + 1 = 0$

Warm Up:

1. Find f'(x) at the zeros of the function.

2. Find f'(x) at the vertex of the function.



3. An object is shot straight up into the air and its position is represented by the equation $s(t) = 46t - 1.4t^2$ where t is in seconds.

a. Find the velocity and acceleration function.

$v(t) = 46 - 2.8t$ $\quad a(t) = -2.8$

$s'(t) =$ $\quad s''(t) =$

b. Find when the object is at rest (v = 0).

$0 = 46 - 2.8t$ $\quad t = 16.4$ sec

$\frac{-46}{-2.8} = \frac{-2.8t}{-2.8}$

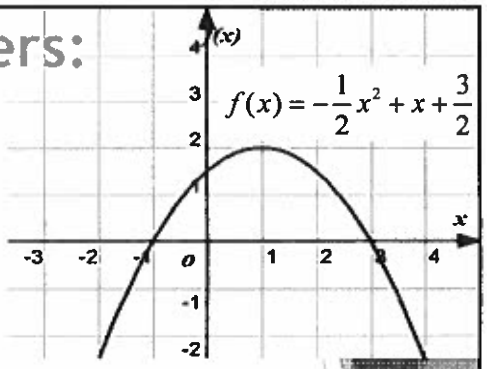
Warm Up Answers:

1. Find f'(x) at the zeros of the function.

$f'(x) = 2 \text{ or } -2$

2. Find f'(x) at the vertex of the function.

$f'(x) = 0$



3. A an object is shot straight up into the air and its position is represented by the equation $s(t) = 46t - 1.4t^2$ where t is in seconds.

a. Find the velocity and acceleration function.

$s'(x) = 46 - 2.8t, \quad s''(t) = -2.8$

b. Find when the object is at rest (v = 0).

$0 = 46 - 2.8t, \; t = 16.4$ sec

HW Questions?

Select Application HW Answers

2. $s(t) = 3t^2 + 2t + 5$

   $s'(t) = 6t + 2$

   $s'(2) = 6(2) + 2 = 14 \ m / \sec$

3. $s(t) = -16t^2 - 26t + 220$

   $s'(t) = -32t - 26$

   $s'(1) = -32(1) - 26 = -58 \ ft / \sec$

Select Application HW Questions

4. $s(t) = t^3 - 4t^2 - 3t$

   $s'(t) = 3t^2 - 8t - 3$

   $0 = 3t^2 - 8t - 3$

   $0 = (3t + 1)(t - 3)$

   $t = -\frac{1}{3} \ or \ t = 3$

   $s(t) = t^3 - 4t^2 - 3t$

   $s'(t) = 3t^2 - 8t - 3$

   $s''(t) = 6t - 8$

   $s''(3) = 6(3) - 8$

   $= 10 \ ft / \sec^2$

5. $s(t) = -16t^2 + 256$

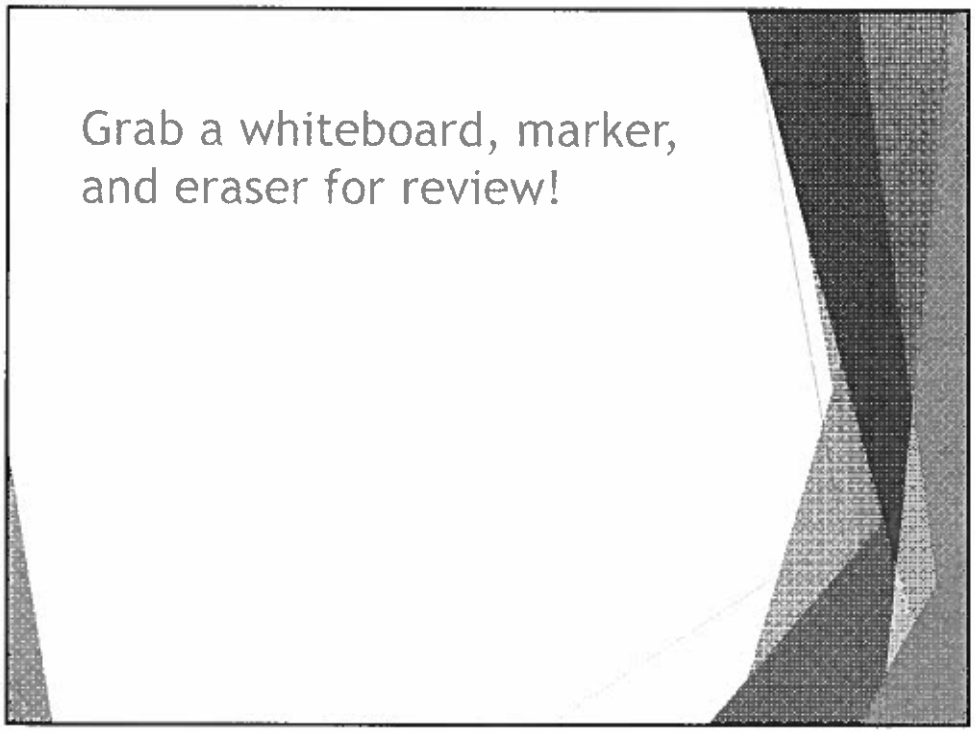
   $0 = -16t^2 + 256$

   $t = \pm 4$

   $s'(t) = -32t$

   $s'(4) = -32(4) = -128$

   4 sec s, $-128 \ ft / \sec$


Grab a whiteboard, marker,
and eraser for review!