AP Calculus AB

Last day to pay AP fees is tomorrow!

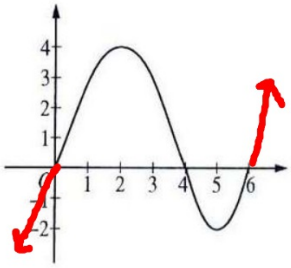
Please get out the multiple choice test from Friday (Due Weds.) have a couple of corrections to make

Reminder: AP test is

- 28 MC questions, 50 min (no calc)
- 17 MC questions, 50 min (calc ok)
- 6 Free Response Q's, 90 min (2 calc ok, 4 no calc)

#11: $\int_0^1 \sqrt{3x+2}\,dx$, $u = 3x+2$

#21: Add these:



Graph of f''

#27:

"...what is the value of g'(29)!"

Net Change: central idea is this:

NOTES

$$f(b) = f(a) + \int_a^b f'(x)dx$$

future value = Starting Value + Sum of all the changes

=

+

Net Change

Let R'(t) model the rate at which our ~~retirement~~ college fund earns money in thousands of dollars per year after 2000 (t=0).

$$R'(t) = 2\sin\left(\frac{\pi t}{6} - 13\right) + 1$$

In 2000, the fund had $25,000 in it. How much money is in the fund in 2008? In 2016?

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Translate into math

$R(0) = 25$

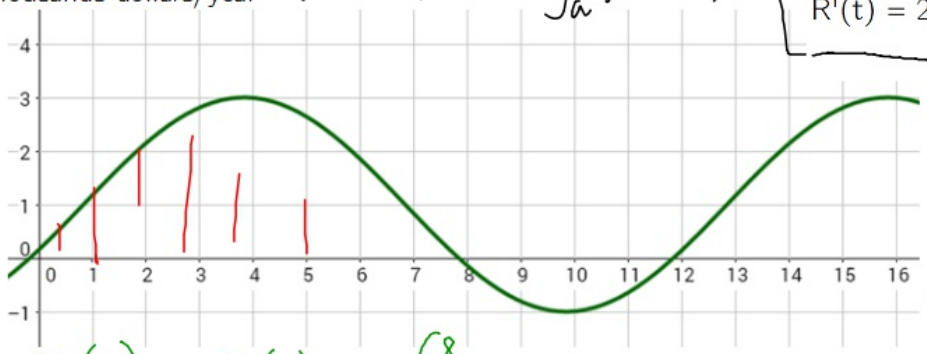
$R(8) = ?$

$R(16) =$

R'(t), thousands dollars/year

$f(b) = f(a) + \int_a^b f'(x)\,dx$

$R'(t) = 2\sin\left(\frac{\pi t}{6} - 13\right) + 1$



t, years

$R(8) = R(0) + \int_0^8 2\sin\left(\frac{\pi t}{6} - 13\right) + 1\,dt$

$25 + 14.589$

$R(8) = 39.589 \Longrightarrow$ In 2008 Fun2 had $39,589.18

$R(16) = R(0) + \int_0^{16} R'(t)\,dt$

$25 + 19.809$ ⇝ In 2016 $44,809

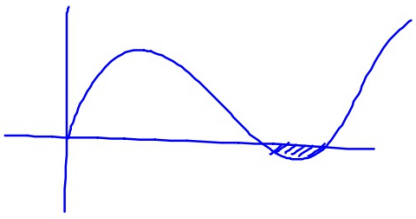
$\Longrightarrow R(16) = R(8) + \int_8^{16} R'(t)\,dt$

How much money was "earned" in the recession?

$[8, 12]$

$$\int_8^{12} R'(t)\,dt = -2.589$$

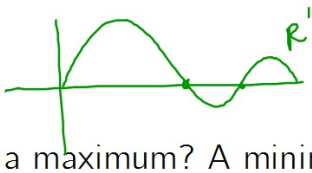
$$\Rightarrow \$2,589$$



Write an equation for R(x) which will calculate how much money is in the fund for any year after 2000 (x=0).

$$\frac{d}{dx}\left(R(x) = \underset{25}{\cancel{R(0)}} + \int_0^x 2\sin\left(\frac{\pi}{6}t - 13\right) + 1 \, dt\right)$$

$$R'(x) = 0 + 2\sin\left(\frac{\pi}{6}x - 13\right) + 1$$



Approximately when is the money in the fund a maximum? A minimum?

Homework:

Finish multiple choice AP no calculator test from 2003.
Please record answers on to scantron.