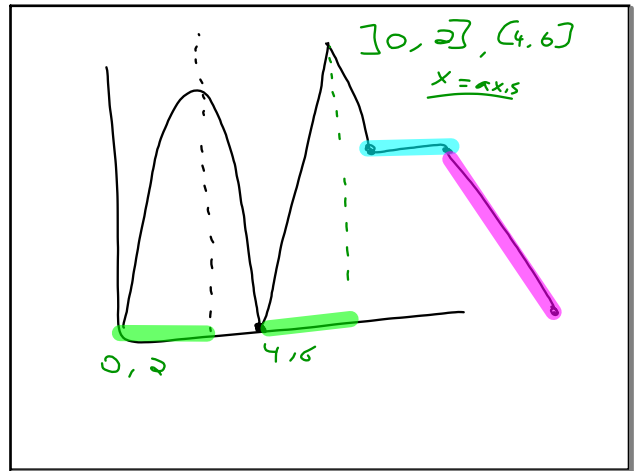
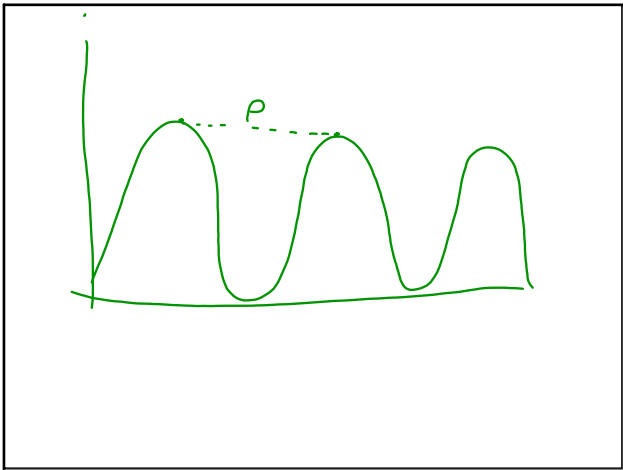


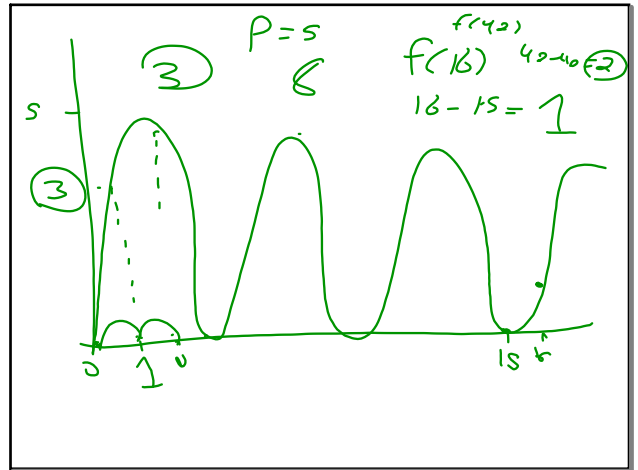
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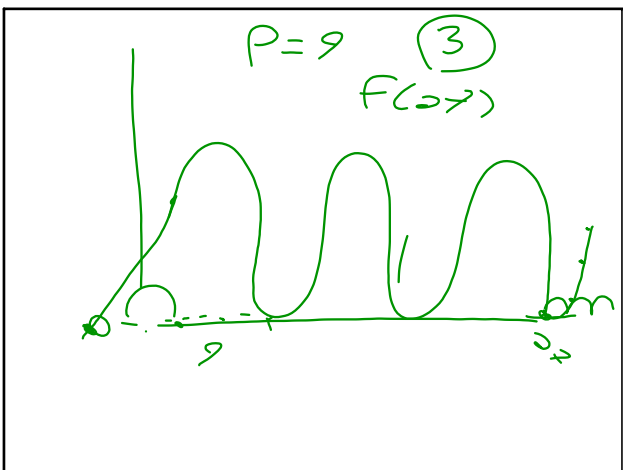
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Feb 12-10:04 AM

PIECEWISE FUNCTION

The rule differs according to the interval of "x"

Consider the following piecewise function:

$$f(x) = \begin{cases} x - 1 & \text{if } x \leq 0 \\ x^2 & \text{if } 0 < x < 2 \\ -x + 2 & \text{if } x \geq 2 \end{cases}$$

Steps:

1. Find interval value of x belongs too.
2. Use function's rule defined in this interval to solve for y.

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The company KandeV sells wheelchairs for retirement homes. The function f which associates the number x of wheelchairs sold with the net annual profit y (in thousands of dollars) has the rule:

$$y = \begin{cases} 0.15x & 0 \leq x \leq 1000 \\ 0.08x + 70 & 1000 < x < 3000 \\ 0.12x & 3000 \leq x \leq 4000 \end{cases}$$

a) If the maximum number of wheelchairs sold per year is 4000, draw the graph of this function.

b) Find dom f . $[0, 3000], [3000, 4000]$

c) How much profit is made by selling 2500 wheelchairs? 22

d) Over which interval is the rate of change the greatest? $[0, 1000]$

$y = 0.08x + 70$
 $y = 0.12x$

Feb 12-3:38 PM

The piecewise function defined on the right associates the number x of months since the beginning of the year with the profit $f(x)$ of a company during that year.

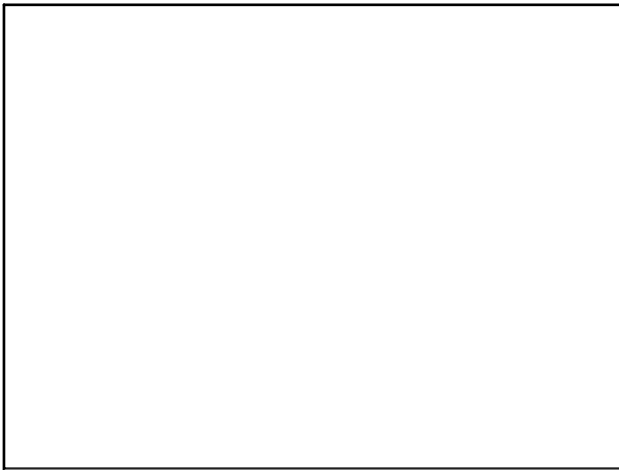
a) What is the company's profit after

- 2 months? 3000
- 4 months? 4000
- 6 months? 6000
- 11 months? 7000

b) Determine the number of months since the beginning of the year if the company's profit is

- \$3000. 2
- \$6500. 9

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