Quiz 24   Name: _____Key_____
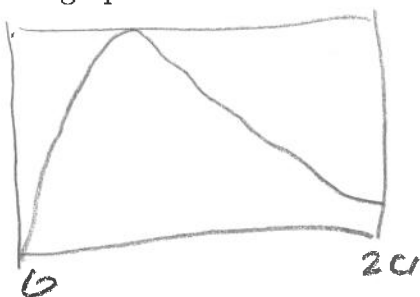
You must show your work to get full credit.

1. The concentration in ng/ml of a in the body is given by
$$C(t) = 25.2((.87)^t - (.63)^t).$$

where t is the time after the drug is administered in hours. (a) Plot $C(t)$ as a function of t and sketch the graph here.
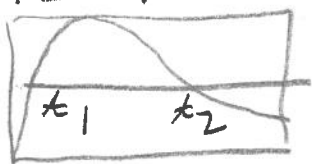

2a

(b) The drug is only effective when the concentration is at least 5 ng/ml. What is the time interval where the drug is effective.
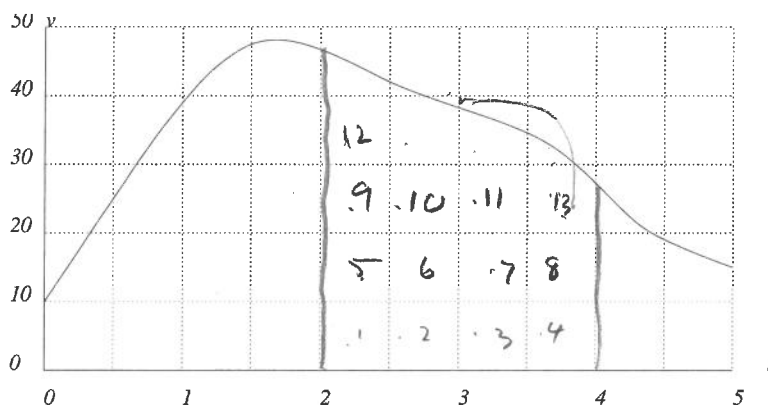
$\Y1 = 25.2(.87^x - .63^x)$
$\Y2 = 5$

The interval is $.774 \le t \le 11.433$

use 2^n calc 5: intersect to
find
$t_1 = .774$
$t_2 = 11.433$

2. The following is the graph of velocity in feet per second of a cheetah during a five second period.

(a) Each of the little squares has a base of $\Delta t = .5$ sec and a height of 10 ft/sec. So what does the area of one of the squares represent in terms of distance?

$(.5 sec) \times (10 ft/sec)$
$= 5 ft$

A square represents ____5 Feet____

(b) Estimate how much distance the cheetah covers between $t = 2$ and $t = 4$.

The distance is about ____75 Ft.____

I count about 15,
boxes which gives distance $5 \times (15) = 75$