Quiz 1

Key

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

1. (9/28 Worksheet) Let C be the piecewise defined function:

$$C(x) = \begin{cases} 39 & \text{if } 0 \le x \le 400 \\ 39 + 0.2(x - 400) & \text{if } 400 < x \end{cases}$$

(a) [1] Find $C(500)$. Because $400 < 500$ (+.5)

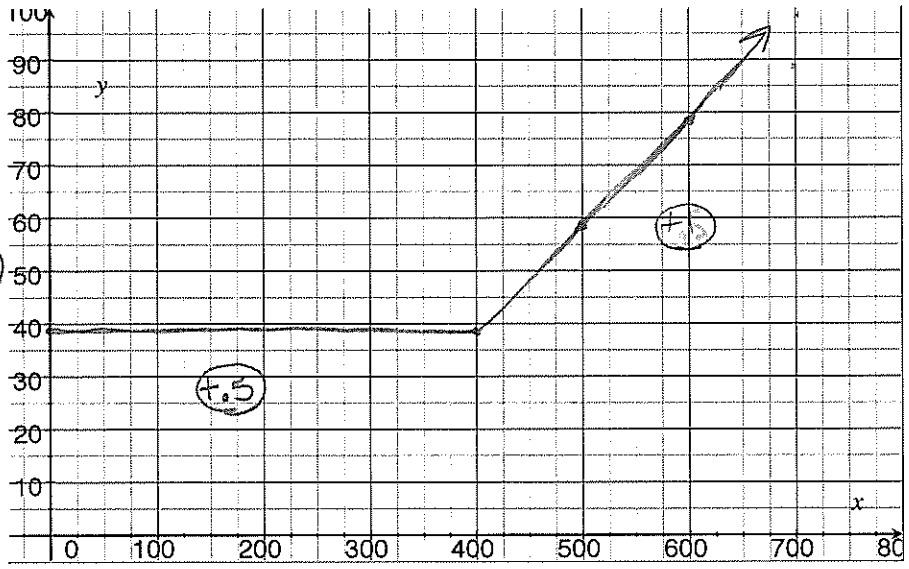
$39 + .2(500-400) = 39 + .2(100) = 39 + 20 = 59$ (+.5)

(b) [1] What is the domain of C?

$[0, \infty)$ (+.5) endpoints (+.5)

(c) [3] Graph C on the axis below: plot points (+1)

x	$C(x)$
0	39
100	39
200	39
400	39
450	$39 + .2(450-400)$
500	59
600	$39 + .2(200) = 39 + 40 = 79$



function (+.5)

plot (+1)

rule $39 + .2(x-400)$

$= 39 + .2x - \frac{2}{10} \cdot 400$

$= 39 + .2x - 80$

$= .2x - 41$ a line

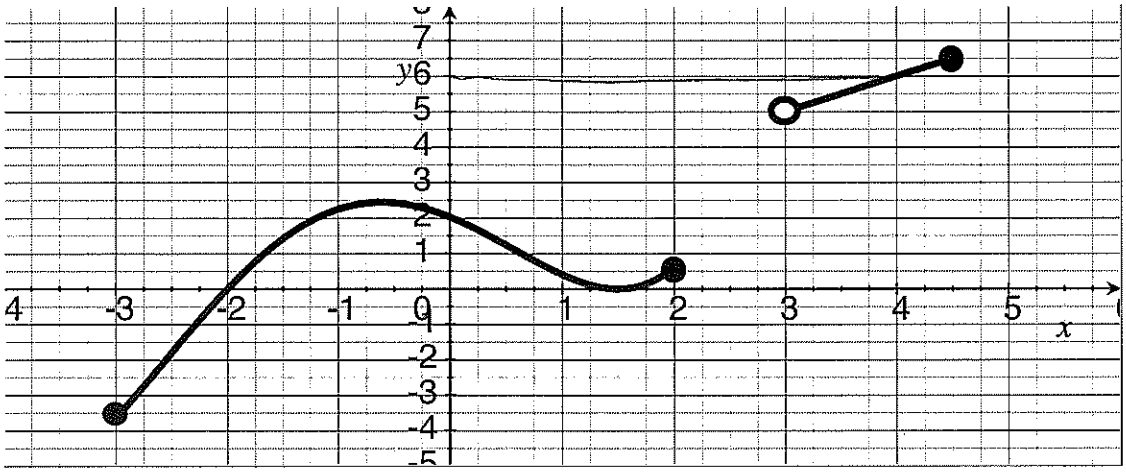
2. (WebHW2 #4) [2] Given that $g(\square) = \frac{5-\square}{5+\square}$, find $g(a-5)$.

$g(a-5) = \frac{5-(a-5)}{5+(a-5)}$ (+.5)

function comp (+.5)

input $a-5$ (+1)

3. Use the the graph of f shown below to answer the following questions:



(a) (§2.2 #25a)[1] Estimate all numbers x in the domain of f for which $f(x) = 6$.

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(b) (§2.2 #23b)[2] What is the range of f?

range/y values (+.5)

$[-3.5, 2.5] \cup (5, 6.5]$

(+.5) (+.5)

endpoints (+.5)