Key

Piecewise Functions

1. $g(x) = \begin{cases} -2x^2 - 5x + 8, & -3 < x \leq 1 \\ -3, & 1 < x < 4 \\ -\frac{x}{2}, & 4 \leq x \leq 8 \end{cases}$

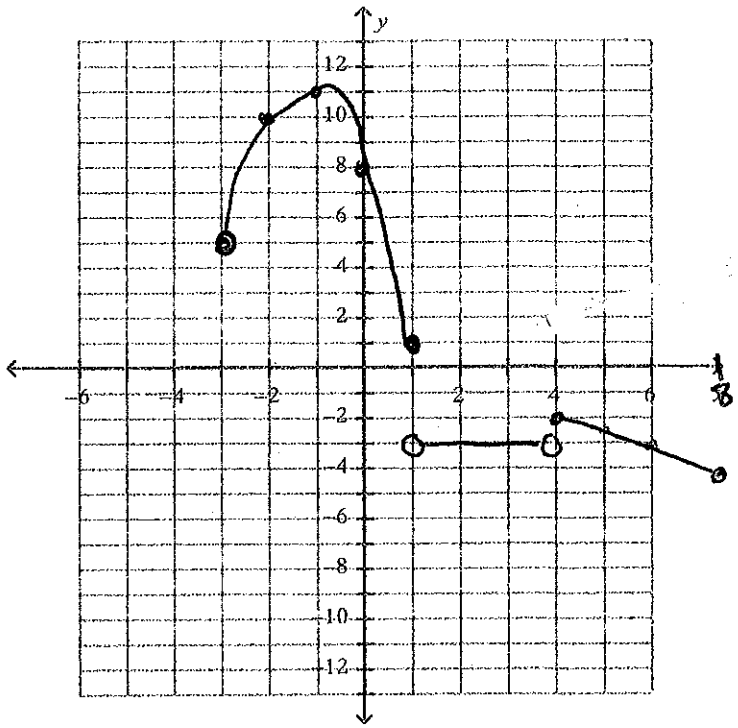
a. What is the domain of g(x)?
$(-3, 8]$

b. What is the range for step 1?
(Use your calculator to find the maximum)
$[1, 11.25]$

c. Find g(1) $= 1$

d. Find g(4) $= -2$

e. Graph the function.



f. What are the maximum and minimum values of g(x)

$-2x^2-5x+8$

-3	5
-2	10
-1	11
0	8
1	1

-3

1	-3
2	-3
3	-3
4	-3

$\frac{-x}{2}$

4	2
5	2.5
6	3
7	3.5
8	4

2. $f(x) = \begin{cases} x^2 + 1, & x \leq 2 \\ 5 - x, & x > 2 \end{cases}$

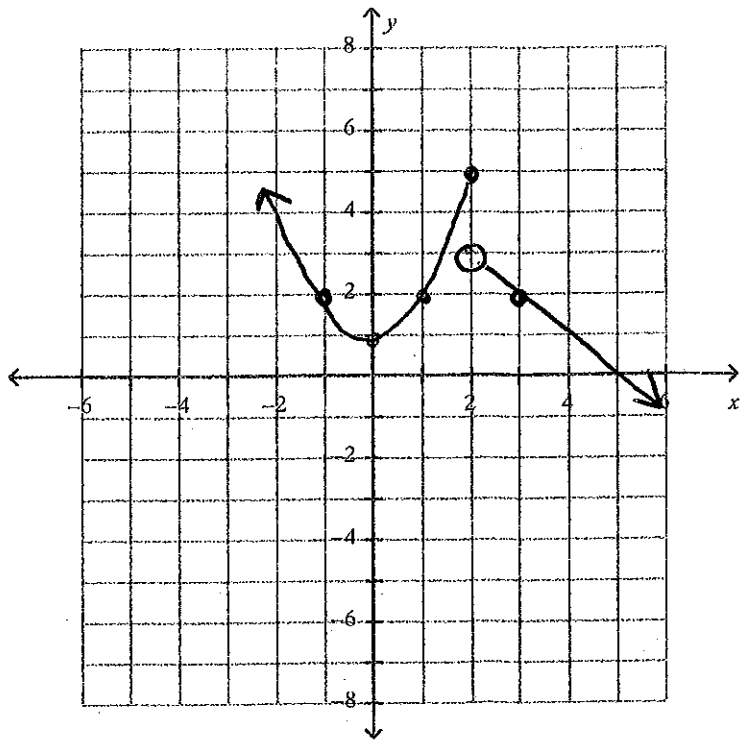
a. What is the domain of f(x)? $(-\infty, \infty)$

b. What is the range for step 1? $[1, \infty)$

c. Find f(1) $= 2$

d. Find f(2) $= 5$

e. Graph the function.



f. What are the maximum and minimum values of g(x)? No maximum
No minimum

x^2

2	5
1	2
0	1
-1	2

$5-x$

2	3
3	2
4	1