

MAC 1105  
worksheet

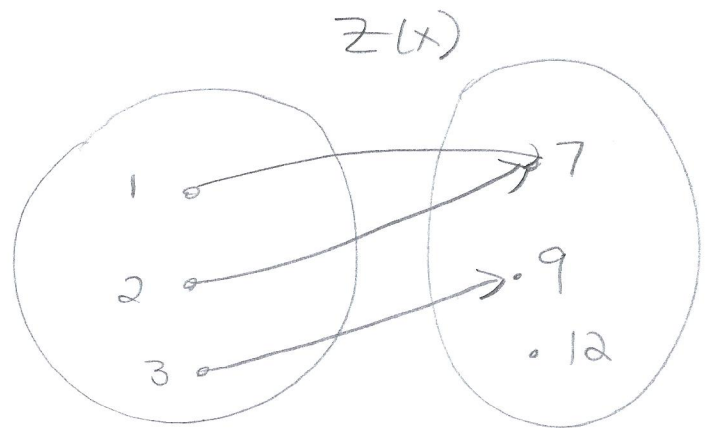
Functions Bonus

Spring 2000

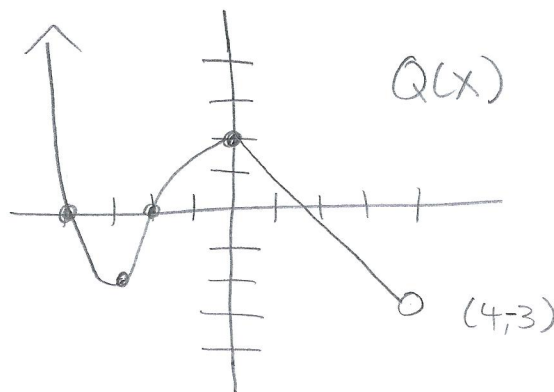
$$f(x) = 5x + 2$$

$$g(x) = 7x^2 - 4x + 9$$

$$h(x) = 12$$



$x$	$R(x)$
7	12
9	1
12	6



①  $f(3)$

②  $g(-1)$

③  $g(z)$

④  $h(9)$

⑤  $h(0)$

⑥  $R(0)$

⑦  $R(9)$

⑧  $Z(2)$

⑨  $Z(12)$

⑩  $Q(0)$

⑪  $Q(4)$

⑫  $Q(-1)$

⑬  $Q(9)$

⑭ Domain of  $Q$

⑮ Range of  $Q$

16) Graph  
 $f(x) = -\sqrt{x+1} - 4$

17) Graph  
 $g(x) = -2(x-1)^3 + 3$

18) Graph  
 $h(x) = -\frac{1}{2}|x+2| + 4$

19) Graph the piecewise function.

$$f(x) = \begin{cases} -x^2 + 3 & \text{if } x \leq -1 \\ 4x + 2 & \text{if } -1 < x < 4 \\ -x + 3 & \text{if } x \geq 4 \end{cases}$$

20) Using the graph from #19, answer the following questions:

a)  $f(2) =$

b)  $f(4) =$

c)  $f(-6) =$

21) consider the following function

$$g(x) = \begin{cases} 2x - 6 & \text{if } -3 \leq x < -1 \\ 4 & \text{if } x = -1 \\ x^2 + 3 & \text{if } -1 < x < 3 \\ -5 & \text{if } x = 3 \\ |2x - 3| & \text{if } x > 3 \end{cases}$$

a)  $g(-2) =$

b)  $g(-1) =$

c)  $g(-7) =$

d)  $g(-5) =$

e)  $g(8) =$

f)  $g(0) =$

22 Find the domain for each function:

a)  $f(x) = \sqrt{2x-3}$

b)  $g(x) = 7x^2 - 3x + 1$

c)  $h(x) = \frac{4}{x^2-9}$

d)  $k(x) = \frac{12}{\sqrt{2-x}}$