

MAT 1033

Fall 2018

Functions worksheet

62 pts total

Name: _____

Date: _____

Section: _____

12 points

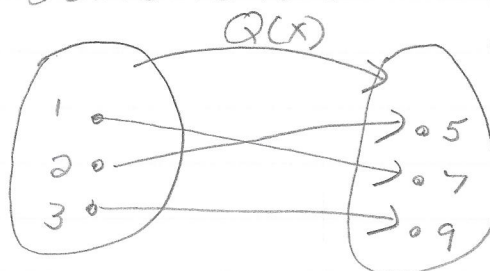
1 point each

Consider the following functions:

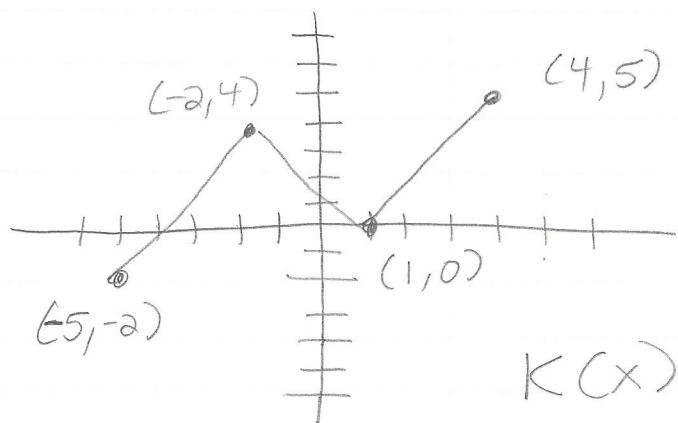
$$f(x) = -4x^2 + 3x - 1$$

$$g(x) = 2x - 7$$

$$h(x) = 15$$



x	Z(x)
1	9
3	5
5	3
9	1
11	6



Evaluate each of the following: (1 point each)

① $f(-2)$

⑦ $Q(4)$

② $g(9)$

⑧ $K(1)$

③ $h(-3)$

⑨ Domain of K

④ $Z(3)$

⑩ Range of K

⑤ $Z(6)$

⑪ $K(8)$

⑥ $Q(2)$

⑫ $K(-3)$

13) Graph $f(x) = -2|x-3|+4$

8 points

graph 2pts
rest 1 point each

basic shape

Graph

(h, k)

a

final shape

Domain

Range

14) Graph $f(x) = (x+1)^3 - 2$

8 points

graph = 2pts
rest = 1pt each

basic shape

Graph

(h, k)

a

final shape

Domain:

Range:

Sketch a graph of

(15) $f(x) = -\sqrt{x+1} - 2$

9 points

graph 2 pts
Rest 1 pt each.

basic shape

(h, k)

Graph

a

+x or -x

final shape

Domain

Range

Sketch

9 points

(16) $f(x) = 2\sqrt{3-x} + 1$

graph 2 pts
Rest 1 pt each

basic shape

Domain:

(h, k)

Range:

a

Graph

-x or +x

final shape

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

2pts each

a) find $f(1)$

b) find $f(3)$

(18) Sketch a graph of $f(x)$ from problem 17.

3pts

14

15

(19)

$$\text{Let } f(x) = -2x^2 + 4x - 7$$

1 point each
except h

9 pts

a) basic shape

b) vertex

c) up or down

d) stretched, compressed
or neutral

e) final shape

f) domain

g) range

h) sketch a graph of $f(x)$ (2 pts)