Name Key

CC Algebra

Date _____

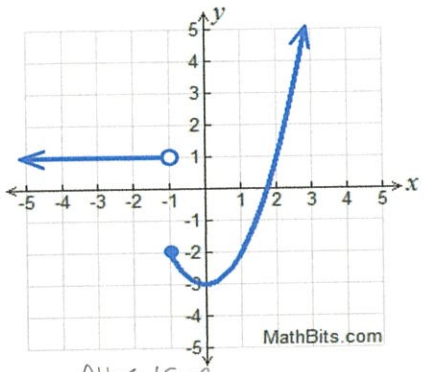
Period _____

Do Now #3

Directions: 1) Find the domain and range of each function.
2) Find the value of each function when given the value of x.

1)

f(x)



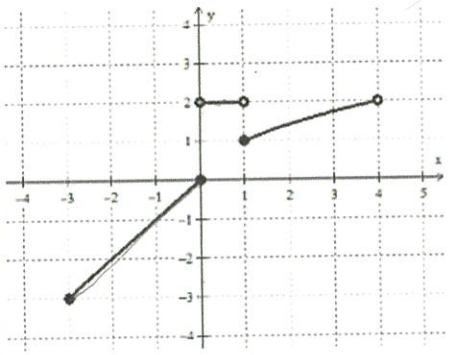
All reals or

Domain: $\{x \mid x \in \mathbb{R}\}$ or $(-\infty, \infty)$ (Set builder; Interval)

Range: $\{y \mid y \geq -3\}$ or $[-3, \infty)$

* Discontinuous graph

g(x)

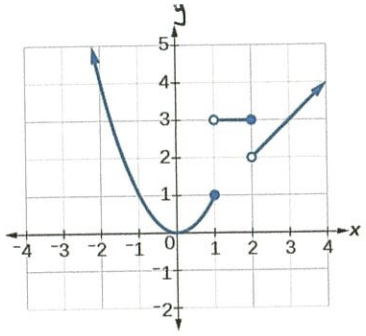


Domain: $\{x \mid -3 \leq x < 4\}$ or $[-3, 4)$ IN

Range: $\{y \mid -3 \leq y \leq 0$ or $1 \leq y \leq 2\}$ or $[-3, 0] \cup [1, 2]$ IN

* Discontinuous graph

h(x)



All reals or

Domain: $\{x \mid x \in \mathbb{R}\}$ or $(-\infty, \infty)$

Range: $\{y \mid y \geq 0\}$ or $[0, \infty)$

* Discontinuous graph

2) Find the value of each using the piece wise function graphs above.

what is the y-value when x is? ...

$f(2) =$ 1	$g(0) =$ 0	$h(2) =$ 3
$f(1) =$ -2	$g(1) =$ 1	$h(1) =$ 1
$f(0) =$ -3	$g(-1) =$ -1	$h(0) =$ 0
$f(-1) =$ -2	$g(-2) =$ -2	$h(-2) =$ 4
$f(-4) =$ 1	$g(-3) =$ -3	$h(3) =$ 3

$g(.5) =$ 2

$h(-1) =$ 1

$h(1.5) =$ 3

Name Key

$+$=$ #+#=# Do Now #3 cont'd C

35 A drama club is selling tickets to the spring musical. The auditorium holds 200 people. Tickets cost $12 at the door and $8.50 if purchased in advance. The drama club has a goal of selling at least $1000 worth of tickets to Saturday's show.

Write a system of inequalities that can be used to model this scenario.

L

let
x = # of tickets sold at the door
y = # of tickets purchased in advance

I

$x + y \leq 200$
$12x + 8.50y \geq 1000$

If 50 tickets are sold in advance, what is the minimum number of tickets that must be sold at the door so that the club meets its goal? Justify your answer.

$y \geq 50$

$1000

$12x + 8.50y \geq 1000$
$12x + 8.50(50) \geq 1000$
$12x + 425 \geq 1000$
$-425 \quad -425$

$\frac{12x}{12} \geq \frac{575}{12}$

$x \geq 47.916\overline{6}$ → Do NOT round!

48 tickets

Check
$12(48) = 576$
$8.50(50) = 425$
1001 ✓