Notes 2-3

Sec 1 H **Domain, Range, & Continuity** **Unit 2**

Vocabulary:	
Domain: x-values input	Range: y-values output
Set Builder Notation: uses inequalities $<$ $>$ open $\leq$ $\geq$ closed  3 $X > 3$	Interval Notation: Min, Max [Min, Max) ( ) does not include (Min, Max] open [Min, Max] [ ] includes closed (Min, Max)

Continuity

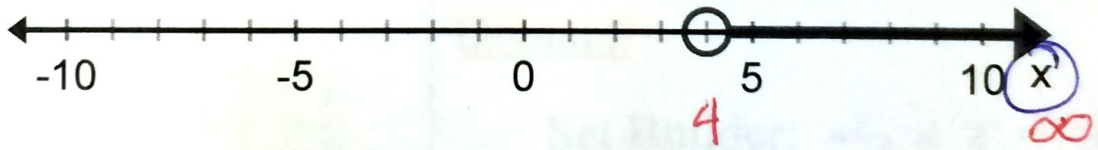
Continuous: If you can trace the function w/o lifting your pencil.

Non-continuous: Can trace but may have to lift your pencil.

Discrete: Scattered points on a graph

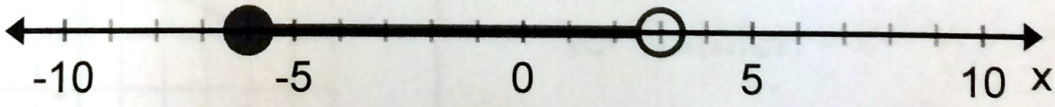
Identify the domain for each graph using BOTH <u>set builder</u> and <u>interval notation</u>.

Ex. 1:



Set Builder: $X > 4$ Interval: $(4, \infty)$

Ex. 2:



Set Builder: $-6 \leq X < 3$ Interval: $[-6, 3)$

Notes 2-3

Sec 1 H | **Domain, Range, & Continuity** | **Unit 2**

Identify the range for each graph using BOTH set builder and interval notation.

Ex. 3:

Max

Use the y variable

4

Min $-\infty$

Set Builder: $y \leq 4$

Interval: $(-\infty, 4]$

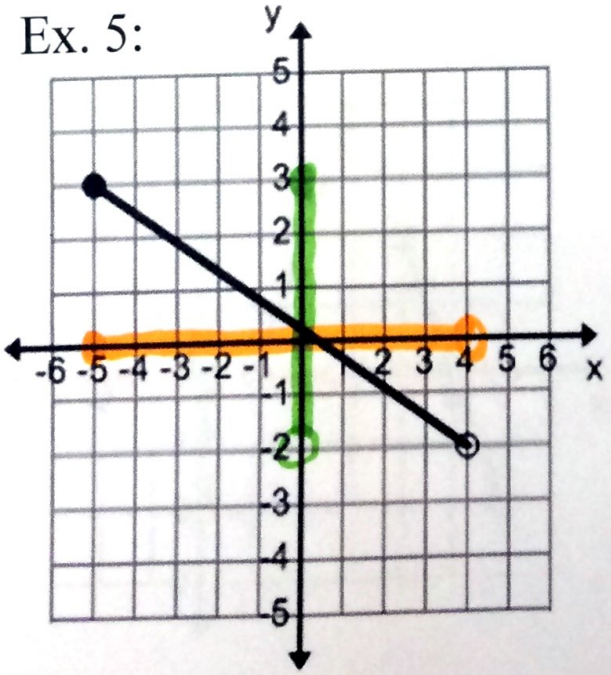
Ex. 4:

Set Builder: $y > -6$

Interval: $(-6, \infty)$

Identify the domain, range, and continuity for each graph using set builder and interval notation.

Ex. 5:



Domain

Set Builder: $-5 \leq x < 4$

Interval: $[-5, 4)$

Range

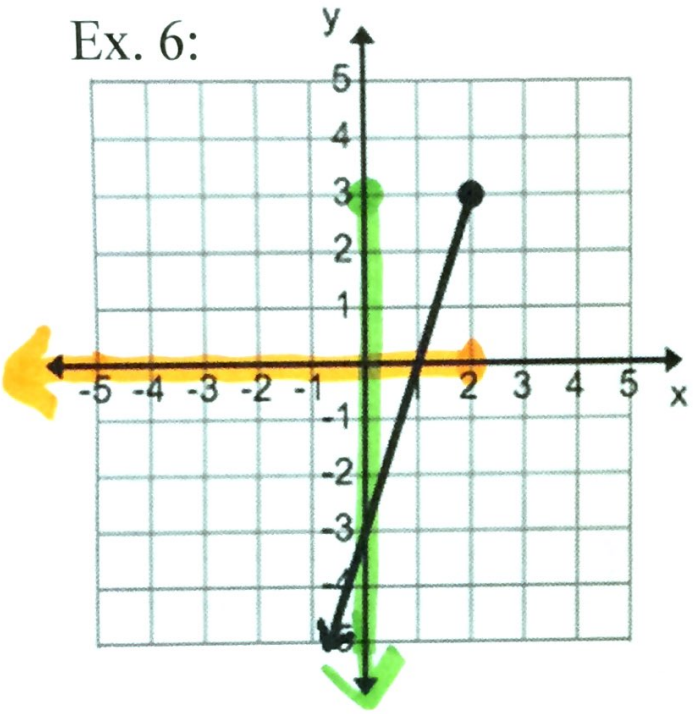
Set Builder: $-2 < y \leq 3$

Interval: $(-2, 3]$

Continuity: continuous

Identify the domain, range, and continuity for each graph using set builder and interval notation.

Ex. 6:



Domain

Set Builder: $x \leq 2$

Interval: $(-\infty, 2]$

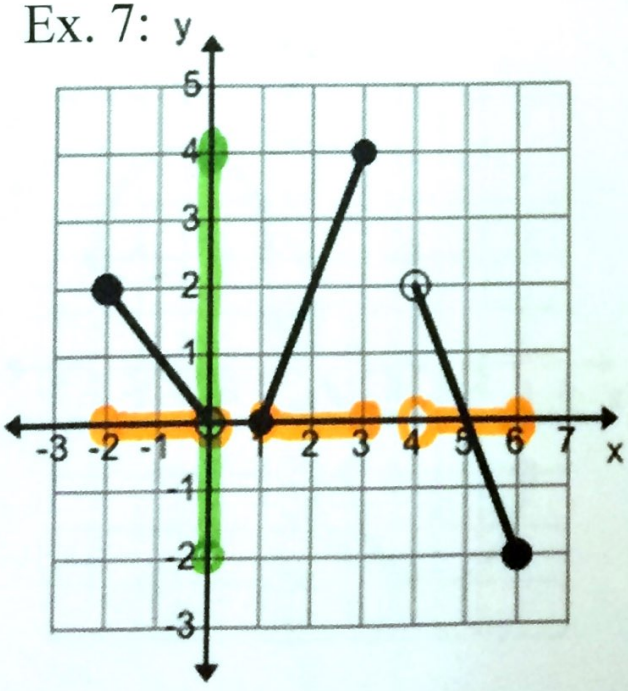
Range

Set Builder: $y \leq 3$

Interval: $(-\infty, 3]$

Continuity: Continuous

Ex. 7:



Domain

Set Builder: $-2 \leq x < 0$ or $1 \leq x \leq 3$ or $4 < x \leq 6$

Interval: $[-2, 0) [1, 3] (4, 6]$

Range

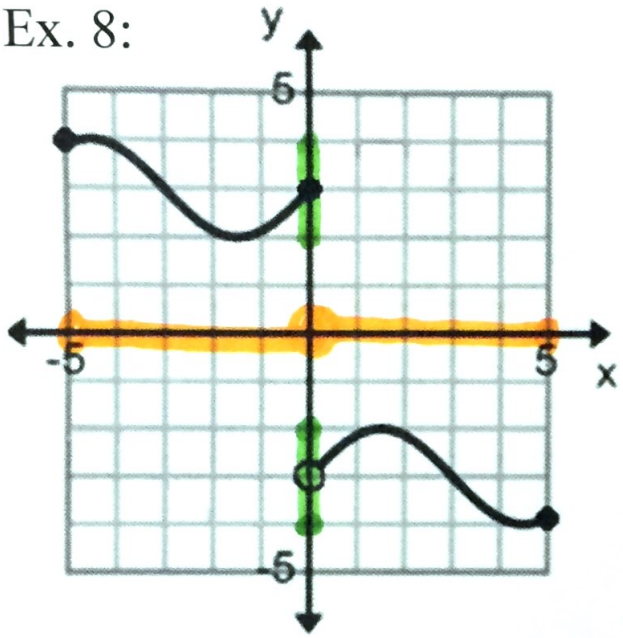
Set Builder: $-2 \leq y \leq 4$

Interval: $[-2, 4]$

Continuity non-continuous

Identify the domain, range, and continuity for each graph using set builder and interval notation.

Ex. 8:



Domain

Set Builder: $-5 \leq x \leq 5$

Interval: $[-5, 5]$

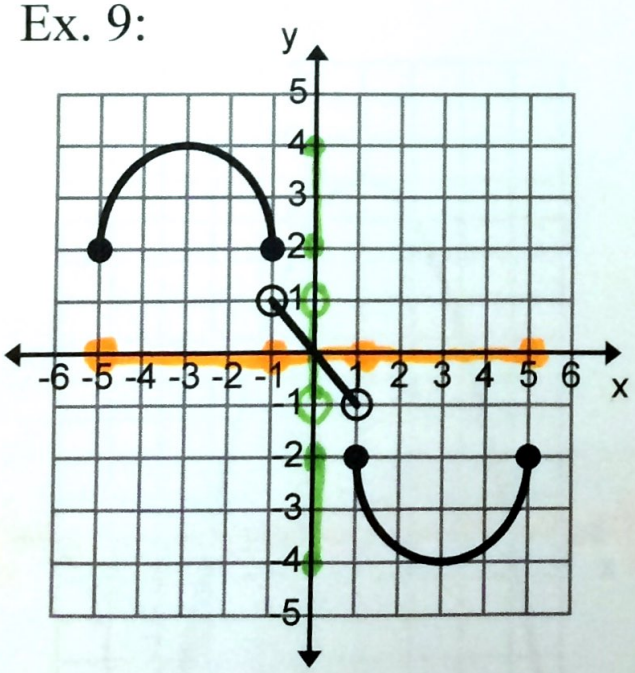
Range

Set Builder: $-4 \leq y \leq -2$ $2 \leq y \leq 4$

Interval: $[-4, -2]$ $[2, 4]$

Continuity: Non-Cont.

Ex. 9:



Domain

Set Builder: $-5 \leq x < 5$

Interval: $[-5, 5]$

Range

Set Builder: $-4 \leq y \leq -2$ $-1 < y < 1$ $2 \leq y \leq 4$

Interval: $[-4, 2]$ $(-1, 1)$ $[2, 4]$

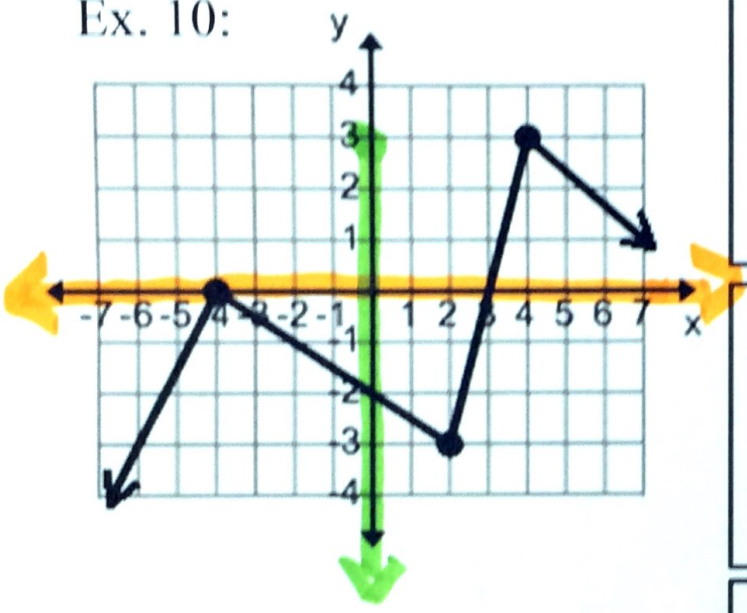
Continuity: Non-Continuous

Notes 2-3

Sec 1 H | Domain, Range, & Continuity | Unit 2

Identify the domain, range, and continuity for each graph using set builder and interval notation.

Ex. 10:



Domain

Set Builder: ~~R~~

Interval: $(-\infty, \infty)$

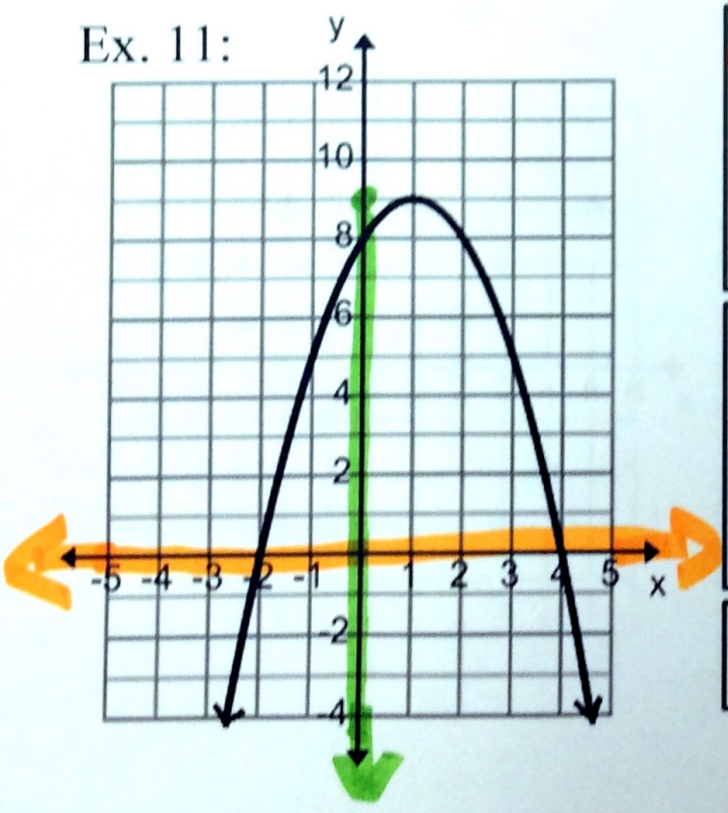
Range

Set Builder: $y \leq 3$

Interval: $(-\infty, 3]$

Continuity: Continuous

Ex. 11:



Domain

Set Builder: All Real # ℝ

Interval: $(-\infty, \infty)$

Range

Set Builder: $y \leq 9$

Interval: $(-\infty, 9]$

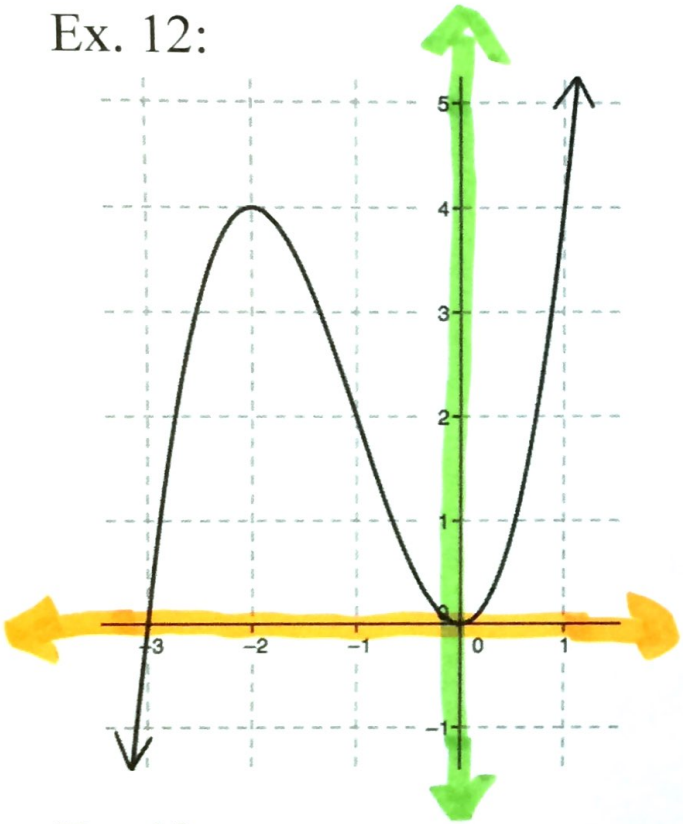
Continuity: Continuous

Notes 2-3

Sec 1 H — Domain, Range, & Continuity — Unit 2

Identify the domain, range, and continuity for each graph using set builder and interval notation.

Ex. 12:



Domain

Set Builder: $\mathbb{R}$

Interval: $(-\infty, \infty)$

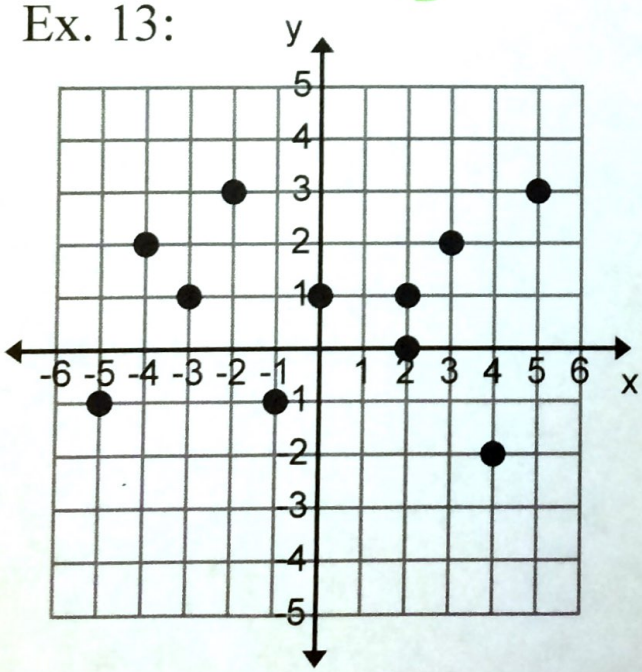
Range

Set Builder: $\mathbb{R}$

Interval: $(-\infty, \infty)$

Continuity: Continuous

Ex. 13:



Domain

Set Builder: $\{-5,-4,-3,-2,-1,0,2,3,4,5,6\}$

~~Interval:~~

Range

Set Builder: $\{-2,-1,0,1,2,3\}$

~~Interval:~~

Continuity: Discrete