A. Lesson Context

BIG PICTURE of this UNIT:	• What is meant by the term FUNCTIONS and how do we work with them? • mastery with working with basics & applications of linear functions • mastery with working with basics & applications of linear systems • understanding basics of function concepts and apply them to lines & linear systems		
CONTEXT of this LESSON:	Where we've been In Lesson 2, you practiced with function notations and function representations	Where we are Working further with skills & concepts related to domain and range	Where we are heading Mastery of working with multiple representations of f(x) = mx + b

B. Lesson Objectives

a. Practice with skills important in mathematically describing domain and range ➔ set notation, number lines, number sets
b. Review three main number sets ➔ natural numbers, integral numbers and real numbers
c. Find the domain and range of relations as presented in multiple representations

C. Fast Five (Skills Review Focus)

1. $13y+19=6(9+y)+14$

2. $8a-2(a+5)=2(a-1)$

3. $8(z+4)=5(13+z)$

4. $-4x-18=-7x+30$

5. $3y+10.5=6.5+2.5y$

6. $3a-\frac{11}{2}=-\frac{3a}{2}+\frac{25}{2}$

7. 3^3-2^4

8. $\frac{1}{2^3}-\frac{1}{3^2}$

D. Number Sets (Skill Builder Focus)

a. Set of **Natural** Numbers ➔ our set of "counting" numbers ➔ $N = \{1,2,3,4,5,.....\}$

b. Set of **Whole** Numbers ➔ our counting numbers as well as zero ➔ $W = \{0,1,2,3,4,5,.....\}$

c. Set of **Integers** ➔ if we now include negative, natural numbers in our number set ➔

$Z = \{.... -5,-4,-3,-2,-1,0,1,2,3,4,5,.....\}$

d. Set of **Rational** Numbers ➔ we now expand our number set to include any number that can be written as a FRACTION (the quotient of two integers)➔ $Q = \left\{ \frac{a}{b} \mid a,b \in Z \text{ and } b \neq 0 \right\}$

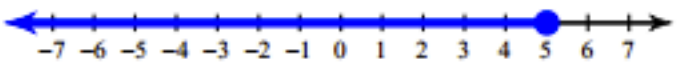
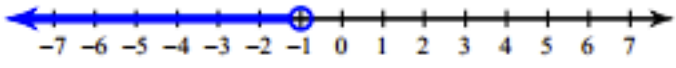
e. Set of **Irrational** Numbers ➔ we now expand our number set to include any number that CANNOT be written as a fraction (i.e one integer over another integer) and includes numbers like radicals and pi

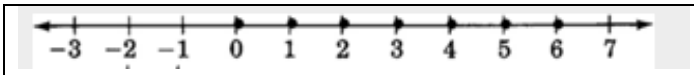
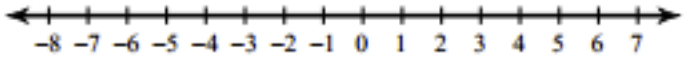
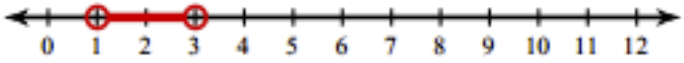
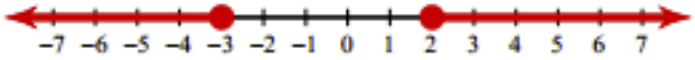
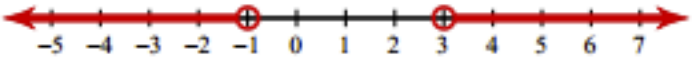
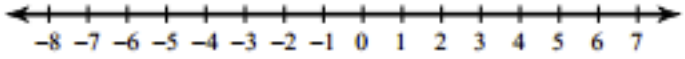
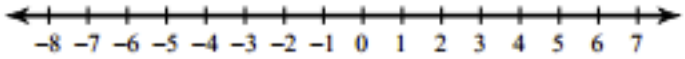
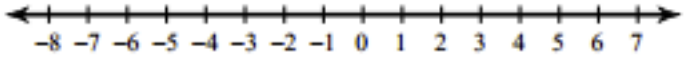
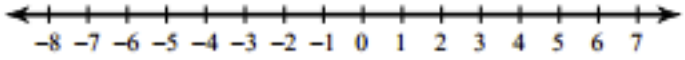
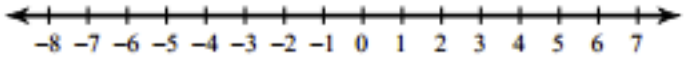
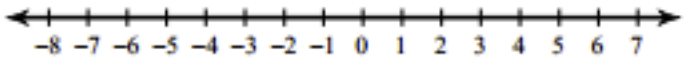
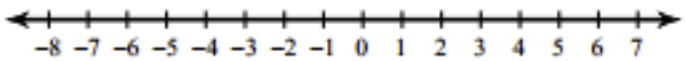
f. Set of **Real** Numbers ➔ our complete set of all numbers (natural, whole, integers, rationals & irrationals), so basically any number on our number line and we use the symbol **R**

E. Practice with Number Sets

Link to this following worksheet from KUTASOFTWARE on placing numbers within number sets (use mini white boards)

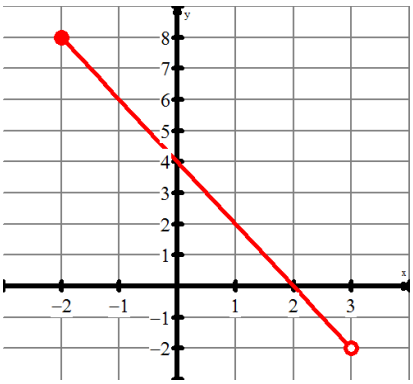
F. Working with Inequalities, Number Lines & Set Notation (Skill Builder Focus)

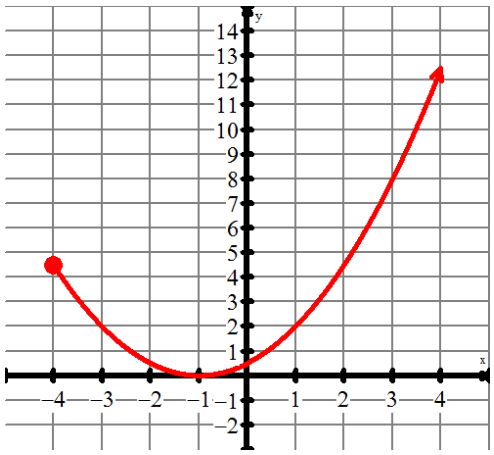
VISUAL: Number Line	Verbal Description	Set Notation
		
		
		

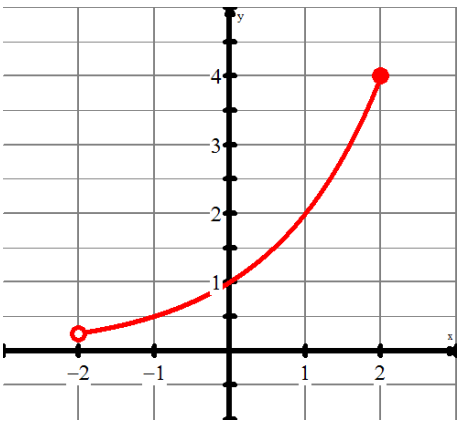
		
		
		
		
		
	All real numbers between and including -2 and 6	
	All real numbers that are less than 5	
	All integers between, but excluding, -6 and 4	
		$\{x \in R \mid -4 < x \leq 2\}$
		$\{x \in Z \mid -4 < x \leq 2\}$
		$\{x \in R \mid x \leq -3 \text{ or } x > 4\}$
		$\{x \in R \mid x > -2\}$

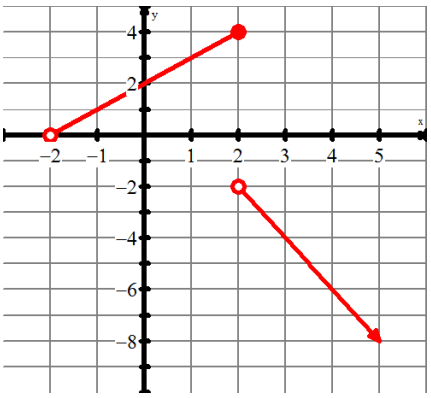
G. Connection to Domain and Range

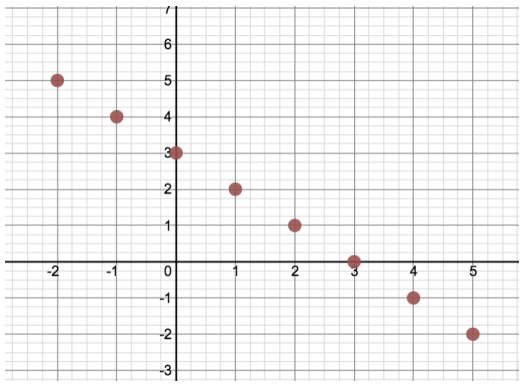
State the domain and range of the following graphs. Use MUST use set notation (for practice!!) and may use interval notation.

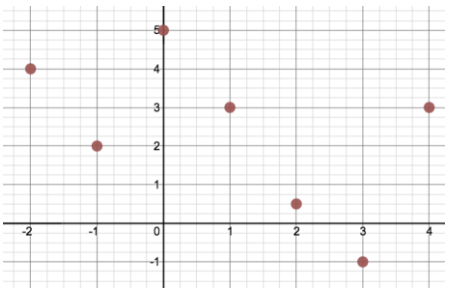












H. Homework

From MHR Math 10, Chapter 6.3 Domain and Range, p301 – 304, do Q1,2,3,4a,7,8,9 and Q10 & 11 are Challenge Questions