

**Warm Up** Evaluate the following.

(Do problems on your HW from yesterday)

1)  $4x^2 - 16$  when  $x = 5$

$$\begin{aligned} &4(5)^2 - 16 \\ &4(25) - 16 \\ &100 - 16 = \textcircled{84} \end{aligned}$$

2)  $12 \div 3 + 2 \cdot 8$

$$\begin{aligned} &4 + 2 \cdot 8 \\ &4 + 16 \\ &\textcircled{20} \end{aligned}$$

3)  $\frac{8 \cdot 2 + 5}{12 + 2^2 - 9}$

$$\begin{aligned} &= \frac{16 + 5}{12 + 4 - 9} \\ &= \frac{21}{16 - 9} = \frac{21}{7} = \textcircled{3} \end{aligned}$$

4)  $[(9 - 7)^2 + 5] + 26$

$$\begin{aligned} &[2^2 + 5] + 26 \\ &(4 + 5) + 26 \\ &9 + 26 \\ &\textcircled{35} \end{aligned}$$

**Homework Questions?**

$$\begin{aligned} 13) \quad &\frac{13 - 4}{18 - 4^2 + 1} = \frac{9}{18 - 16 + 1} = \frac{9}{2 + 1} = \frac{9}{3} \\ &= \textcircled{3} \end{aligned}$$

$$15 - 5 + 3 \div 4$$

$$\frac{3}{4}$$

$$15 - 5 + 0.75$$

$$10 + 0.75$$

$$10.75$$

$$10\frac{3}{4}$$

$$\frac{43}{4}$$

$$12 + 6 \div 3 - 2$$

$$12 + 2 - 2$$

$$14 - 2 = 12$$

On the top of your paper (by your name) rate yourself for this section:

**4 - I can summarize the concepts and explain it to others**

**3 - I can apply the concept to answer questions correctly**

**2 - I can apply the concepts but with some mistakes**

**1 - I need help and know how to apply the concept**

**0 - I can't apply the concept, even with help**

\*Rating of 0-2 is a warning signal to me that you need help\*

**The Unit Organizer**

NAME \_\_\_\_\_  
DATE \_\_\_\_\_

Algebra 1.5 Concepts		
② LAST UNIT Experience None	① CURRENT UNIT Connections to Real Numbers	③ NEXT UNIT Experience Properties of Real Numbers
⑧ Student Activities or Assignments  1.1 1.2 1.3 1.4 1.8	⑤ UNIT MAP  	
⑦ UNIT SELF-TEST QUESTIONS  1. How do you use order of operations to evaluate both numerical and variable expressions? 2. How do you know if a number is a solution to an equation or inequality? 3. How do you evaluate functions?	Evaluate Simplify Check Determine	⑥ UNIT RELATIONSHIPS

# 1.4 Equations and Inequalities

**Equation:** Needs an = sign

**Solution of an equation:**

$\neq$   $\hookrightarrow$  makes it true

ex:  $x + 5 = 8$

**Inequality:** Less than

$<$

$\leq$

$\rightarrow$

$\leftarrow$

$>$

$\geq$

$>$

Greater  
Than

**Solution of an inequality:**

makes it true

**Try It** Check whether the given number is a solution of the equation or inequality. *yes or No?*

1.  $4d + 1 = 9$ ;  $2 = d$

$4(2) + 1 = 9$

$8 + 1 = 9$

$9 = 9 \checkmark$

Yes

2.  $5n - 7 < 23$ ;  $6$

$5(6) - 7 < 23$

$30 - 7 < 23$

$23 < 23$

No

3.  $x^2 + 6 \geq 55$ ;  $7$

$7^2 + 6 \geq 55$

$49 + 6 \geq 55$

$55 \geq 55$

Yes

## 1.5 A Problem Solving Plan Using Models

Operation	Verbal Phrase	Expression
Addition $+$	The <u>sum</u> of six and a number	$6 + x$
	Eight <u>more than</u> a number	$y + 8$
	A number <u>plus</u> five	$n + 5$
	A number <u>increased by</u> seven	$x + 7$
Subtraction $-$	The <u>difference</u> of five and a number	$5 - y$
	Four <u>less than</u> a number	$x - 4$
	Seven <u>minus</u> a number	$7 - n$
	A number <u>decreased by</u> nine	$n - 9$
Multiplication $\times$	The <u>product</u> of nine and a number	$9x$
	Ten <u>times</u> a number	$10n$
	A number <u>multiplied by</u> three	$3y$
Division $\div$	The <u>quotient</u> of a number and four	$\frac{n}{4}$
	Seven <u>divided by</u> a number	$\frac{7}{x}$

sum

difference

product

quotient

## 1.7 An Introduction to Functions

- Goals:**
- Identify and make an input-output table for a function.
  - Write an equation for a real-life function.

**EQ:** What is the difference between domain and range?

## Vocabulary

**Function:** relationship between  $x$  +  $y$   
 \* for each  $x$  there is only 1  $y$

**X Input:** #'s we use or put in

**y Output:** answers  $f(x) = y$

$x$	$y$
0	5
1	5
2	5
0	10

Not  
a  
function

**Domain:** set of all inputs

**Range:** set of all outputs

### Example 1: Making an Input-Output Table

a. Make an input-output table for  $y = x^2$  using  $x = 0, 1, 2,$  and  $3$ .

$x$	$y$
0	0
1	1
2	4
3	9

b. Does the table represent a function? Justify your answer.

Yes, b/c for every  $x$  there is exactly 1  $y$

c. Describe the domain and range.

Domain: 0, 1, 2, 3

Range: 0, 1, 4, 9

## 1.7 Summary

**EQ:** What is the difference between domain and range?

Domain is set of inputs  
 & Range is set of outputs

# Homework

## Chapter 1 Cumulative Review Worksheet

- Reminder:**
- \*Syllabus is Due Monday
  - \*Book Cover (paper bag)
  - \*Binder