

**Warm up**

Translate the verbal sentence into an equation or inequality.

1. 24 decreased by a number is 18.
2. A number divided by 12 is less than 3.
3. 8 times a number is 24.

**As you come in...**

- Grab Ch.2 Notes Packet (on table)
- Take out your Ch.1 Review Wkst
  - > For warm ups you can continue working on this homework
- Take out your Notes from Ch.1

## Homework Questions?

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\*

# 1.8 An Introduction to Functions

**Goals:** • Use different ways to represent functions

**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:** numbers we use  
or put in

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

**Input-Output table:**

way to describe function

**Domain:** set of all inputs**Range:** set of outputs

X	Y
1	0
2	3
3	6

**Example 1: Make an Input-Output Table**

1. Make an input-output table for  $y = 2x - 1$  using  $x = 1, 2, 3,$  and  $4$ . Does the table represent a function? Justify your answer.

$x$ (In)	$y$ (out)
1	1
2	3
3	5
4	7

Domain: 1, 2, 3, 4

Range: 1, 3, 5, 7

$$y = 2x - 1$$

$$y = 2(1) - 1$$

$$= 2 - 1$$

$$y = 1$$

$$2(2) - 1 = 3$$

$$2(3) - 1 = 5$$

$$2(4) - 1 = 7$$

## 1.8 Summary

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

set of  
input

set of  
output

## 2.1 The Real Number Line

**Goal:** • Be able to graph, compare, and order real numbers.

The Unit Organizer		④ BIGGER PICTURE	NAME _____ DATE _____ Mo/Date/Year
← Algebra 9/Algebra 9 Concepts →			
② LAST UNIT/Experience <b>None</b>	① CURRENT UNIT <b>Properties of Real Numbers</b>	③ NEXT UNIT/Experience <b>Solving Linear Equations</b>	
⑥ Student Activities or Assignments  2.1 2.2 2.3 2.4 2.5 2.6 2.7	⑤ UNIT MAP 		
⑦ UNIT SELF-TEST QUESTIONS  1. How do you add, subtract, and multiply integers? 2. How do you use the distributive property to evaluate and simplify variable expressions? 3. How do you simplify a variable expression by combining like terms? 4. How can absolute value be used to evaluate expressions?		⑧ UNIT RELATIONSHIPS  Simplify Calculate Compare and contrast	

Real Numbers	
<p style="text-align: center;">Natural #s - 1,2,3...</p> <p style="text-align: center;">Whole #s - 0,1,2,3...</p> <p style="text-align: center;">Integers - ...-2,-1,0,1,2...</p> <p style="text-align: center;">Rational #s - ...-1/2, -0.222, 0, 4/5, 1.58</p>	Irrational #'s - $\sqrt{2}, \pi$  $\frac{1}{\sqrt{2}}$

Write the numbers in increasing order.

1)  $\checkmark$   $\checkmark$   $\checkmark$   $\checkmark$   
 $\underline{-0.04}$ ,  $\underline{.3}$ ,  $3.0$ ,  $\underline{-0.3}$ ,  $\underline{-0.03}$

$\checkmark$   $\checkmark$   $\checkmark$   $\checkmark$   $\checkmark$   
 $-0.3$ ,  $-0.04$ ,  $-0.03$ ,  $.3$ ,  $3.0$

2)  $4\frac{1}{2}$ ,  $4.4$ ,  $5.1$ ,  $\underline{-6}$ ,  $\underline{-6.1}$ ,  $\underline{-5\frac{1}{2}}$

$4.5$

$-5.5$

$-6.1$ ,  $-6$ ,  $-5\frac{1}{2}$ ,  $4.4$ ,  $4\frac{1}{2}$ ,  $5.1$

3)  $\checkmark$   $\checkmark$   $\checkmark$   $\checkmark$   $\checkmark$   
 $7.03$ ,  $\underline{-7.08}$ ,  $\underline{-7.11}$ ,  $\underline{-7.02}$ ,  $7.07$

$-7.11$ ,  $-7.08$ ,  $-7.02$ ,  $7.03$ ,  $7.07$

## 2.2 Absolute Value

**Goals:** • Find the opposite and the absolute value of a number.

**EQ:** What does the absolute value represent?

## Vocabulary

### Opposite:

# that are same distance from 0

ex:  $3 + -3$



### Absolute value:

Distance a # is from 0

★ Always Positive

ex:  $|0| = 0$   
 $|-5| = 5$   
 $|13| = 13$

### Example 1: Find the Opposite of a Number

Find the opposite of the following numbers.

a. 9

$-9$

b.  $-4.7$

$4.7$

c.  $-\frac{1}{12}$

$\frac{1}{12}$

d. 0

0



**Example 2: Solve an Absolute Value Equation**

Evaluate the expression.

1.  $|-10| = 10$

2.  $-|6.1| = -6.1$

3.  $|-3| = -3$

4.  $|3.8| = 3.8$

**Example 3: Solve an Absolute Value Equation**

Use mental math to solve the equation.

a.  $|x| = 7$

$x = -7$

$x = 7$

b.  $|-x| = 5$

$x = 5$

$x = -5$

c.  $|x| = 0$

$x = 0$

d.  $|-4.5| = x$

$x = 4.5$

$|x| = -7$  No Sol'n.

# Summary

**EQ:** What does the absolute value represent?

Distance a number  
is from 0

# Homework

- Finish Chapter 1  
Review Worksheet
- Absolute Value Worksheet

\*Book Cover