**Warm Up** Evaluate the following.
(Do problems on your HW from yesterday)

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

$4(5)^2-16$
$4(25)-16$
$100-16 = 84$

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

$4+2\cdot 8$
$4+16$
$20$

3) $\dfrac{8 * 2 + 5}{12 + 2^2 - 9}$

$= \dfrac{16+5}{12+4-9}$
$= \dfrac{21}{16-9} = \dfrac{21}{7} = 3$

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

$[2^2+5]+26$
$(4+5)+26$
$9+26$
$35$

**Homework Questions?**

13) $\dfrac{13-4}{18-4^2+1} = \dfrac{9}{18-16+1} = \dfrac{9}{2+1} = \dfrac{9}{3}$

$= 3$

$15 - 5 + 3 \div 4$

$15 - 5 + 0.75$

$10 + 0.75$

$10.75$

$\frac{3}{4}$

$10\frac{3}{4}$

$\frac{43}{4}$

$12 + 6 \div 3 - 2$

$12 + 2 - 2$

$14 - 2 = 12$

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**

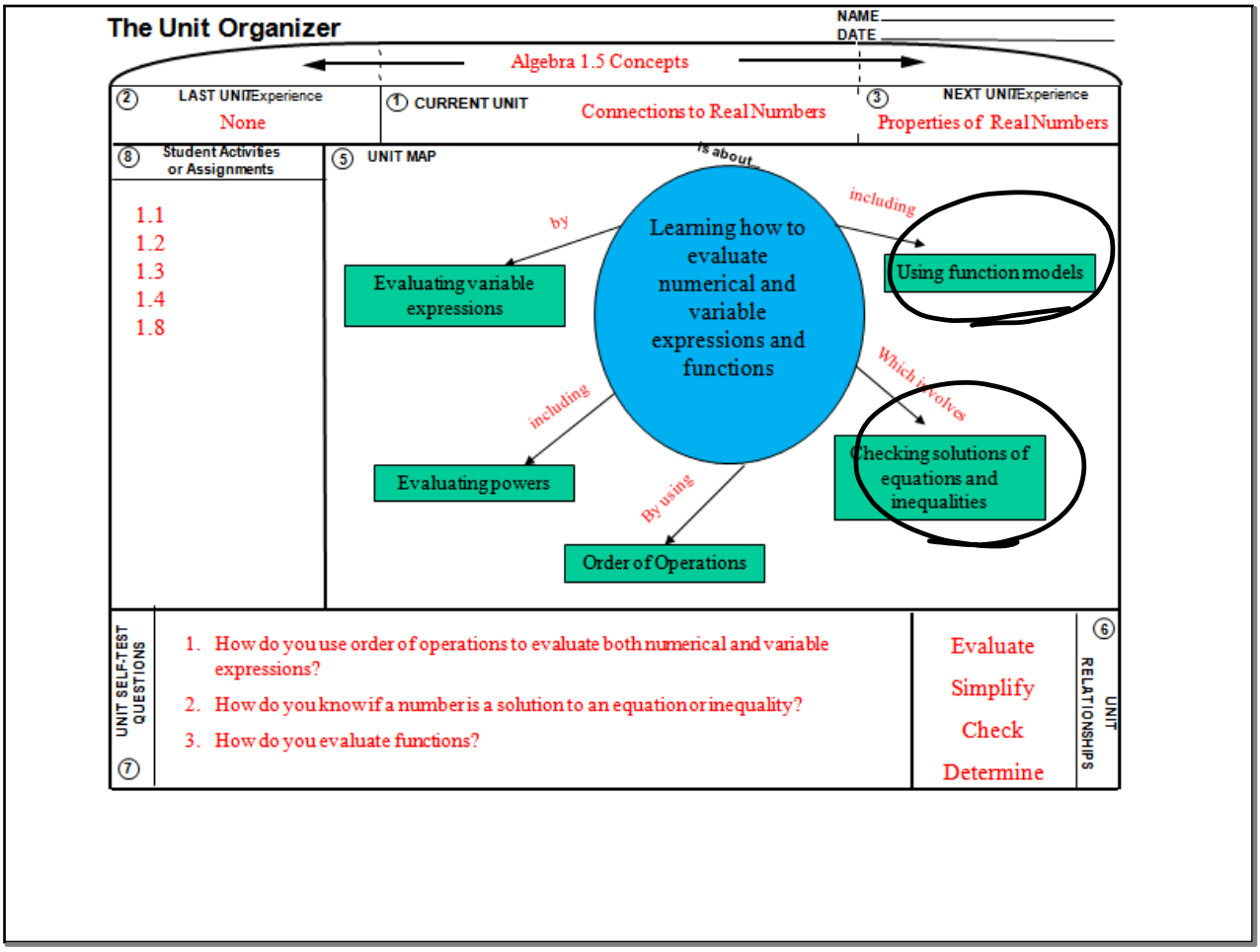
**3 - I can apply the concept to answer questions correctly**

**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*



# 1.4 Equations and Inequalities

**Equation:** Needs an = sign

**Solution of an equation:** ex: $x+5=8$

≠ ↳ makes it true

**Inequality:** Less than $<$ $\leq$ Greater than $>$ $\geq$

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

$4(2)+1=9$
$8+1=9$
$9=9$ ✓
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 *sum* of six and a number | $6 + x$ |
| + | Eight *more than* a number | $y + 8$ |
| | A number *plus* five | $n + 5$ |
| | A number *increased* by seven | $x + 7$ |
| Subtraction | The *difference* of five and a number | $5 - y$ |
| − | Four *less than* a number | $x - 4$ |
| | Seven *minus* a number | $7 - n$ |
| | A number *decreased* by nine | $n - 9$ |
| Multiplication | The *product* of nine and a number | $9x$ |
| × | Ten *times* a number | $10n$ |
| | A number *multiplied* by three | $3y$ |
| Division | The *quotient* of a number and four | $\frac{n}{4}$ |
| ÷ | Seven *divided* by 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