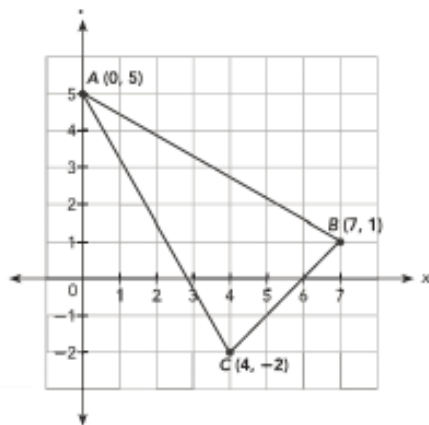## Week 1 Thursday Course 3 Warm-up
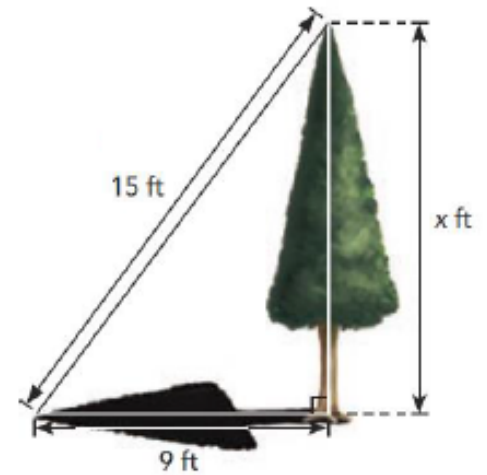
Seventy concert tickets were sold for $550. Each adult ticket cost $9 and each children's ticket cost $5. Find the number of adult tickets and the number of children's tickets sold.

Finding Distance
Find the distance from A to C

Let A (0, 5) be (x_1, y_1) and C (4, −2) be (x_2, y_2).

A tree has a shadow length of approximately 9 feet. The distance from the tip of the tree to the tip of the shadow is about 15 feet. How tall is the tree?

15 ft

x ft

9 ft

Seventy concert tickets were sold for $550. Each adult ticket cost $9 and each children's ticket cost $5. Find the number of adult tickets and the number of children's tickets sold. **Adult tickets: 50; Children's tickets: 20**
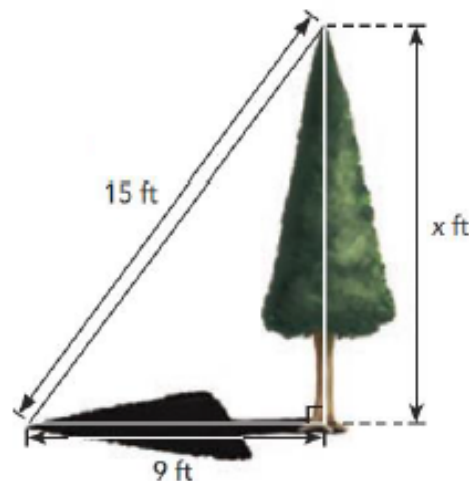
Finding Distance
Find the distance from A to C

Let A (0, 5) be (x_1, y_1) and C (4, −2) be (x_2, y_2).

Distance from A to $C = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$\qquad = \sqrt{(4 - 0)^2 + [(-2) - 5]^2}$

$\qquad = \sqrt{4^2 + (-7)^2}$

$\qquad = \sqrt{65}$ units

A tree has a shadow length of approximately 9 feet. The distance from the tip of the tree to the tip of the shadow is about 15 feet. How tall is the tree?

12

15 ft

x ft

9 ft

Objective

TSW understand that a function is…

***relation between set of inputs and outputs**

A function is a relation between a set of inputs and a set of outputs, in which every input has exactly one output. You can use tables, graphs, and equations to represent many functions.

**Common Core State Standards**

8F1 Understand that a function is a rule that assigns to each input exactly one output. 8F4 Construct a function to model a linear relationship between two quantities 8F5 Describe qualitatively the functional relationship between two quantities by analyzing a graph…

Mathematical Practices *MP1 Solve problems/persevere MP2 Reason MP 4 Model Mathematics*

3 The table shows the relation between the heights of five statues and their weights.

Height (in.)	40	35	56	70	47
Weight (lb)	85	84	90	99	86

Copy and complete the mapping diagram to show the relation between the heights of the five statues and their weights. Then identify the type of relation between the heights and the weights.
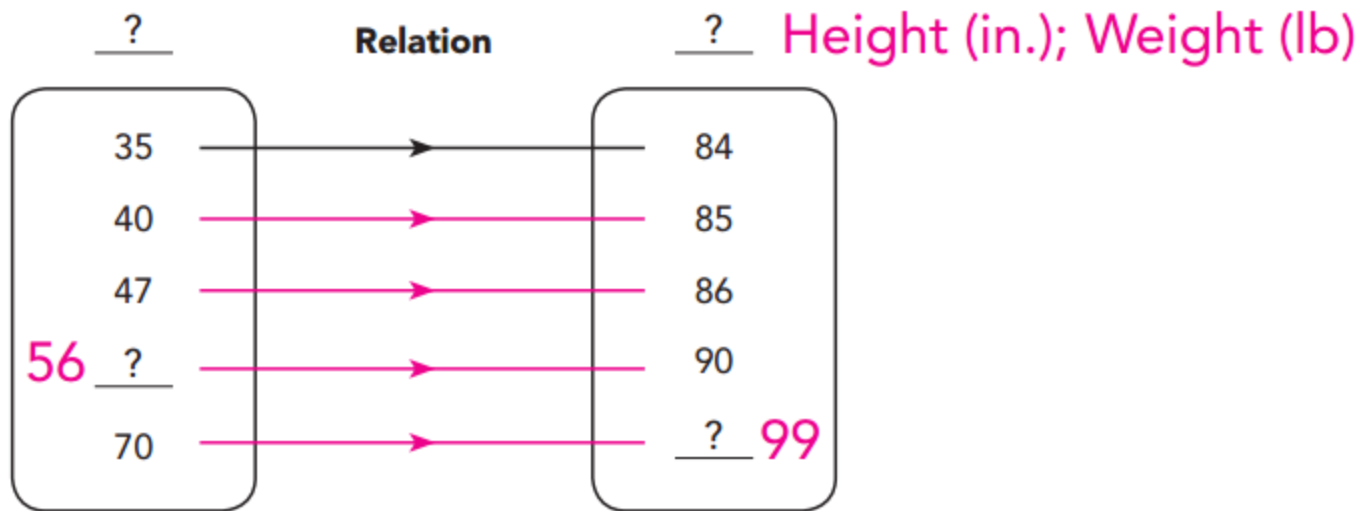

   ?   **Relation**   ?

35   →   84
40   85
47   86
?   90
70   ?
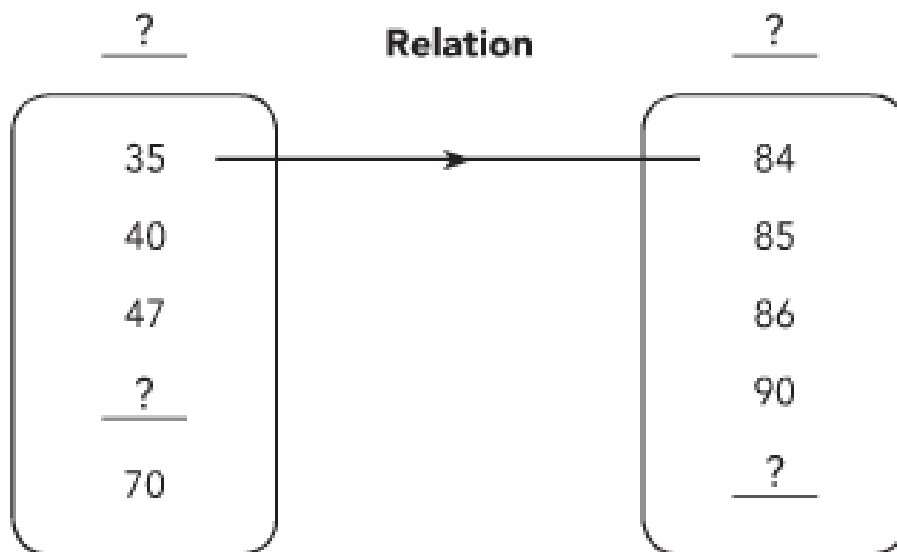
The relation between the heights and the weights is a ___?___-to-___?___ relation.

3 The table shows the relation between the heights of five statues and their weights.

Height (in.)	40	35	56	70	47
Weight (lb)	85	84	90	99	86

Copy and complete the mapping diagram to show the relation between the heights of the five statues and their weights. Then identify the type of relation between the heights and the weights.

_?_   **Relation**   _?_ Height (in.); Weight (lb)

35 ────────▶ 84

40 ────────▶ 85

47 ────────▶ 86

56 _?_ ────────▶ 90

70 ────────▶ _?_ 99

Practice 6.1 #1-8

Challenge-

*Solve created equations

"Pick a Snowflake"

*Real World Problem (website)

*BuzzMath

Lesson Check #1 & 5– understand relations and identify types of relations

Lesson 6.1 Understanding Functions and Relationships Day 1

Given the relation described, identify the input and the output.

1 Mrs. Thomas wants to find out the price charged for the same stereo speaker at different stores.

2 Five students, Jessie, Patrick, Wayne, Colin, and Susie, have different heights. Their teacher wants to know their heights.

3 Ginny wants to know what after-school activities each of her friends signed up for so she knows whether she shares the same interests.

1. Mrs. Thomas wants to find out the price charged for the same stereo speaker at different stores. **Input: Stereo speaker; Output: Prices charged for the same stereo speaker at different stores**

2. Five students, Jessie, Patrick, Wayne, Colin, and Susie, have different heights. Their teacher wants to know their heights. **Input: Names of students; Output: Height of students**

3. Ginny wants to know what after-school activities each of her friends signed up for so she knows whether she shares the same interests. **Input: Ginny's friends; Output: After-school activities**

Lesson 6.1 Understanding Functions and Relationships Day 1

Draw a mapping diagram to represent each relation. Then identify each type of relation.

7 The table shows the numbers of various types of fruit sold in a supermarket. Draw a mapping diagram to represent the relation between each fruit and the number sold by the supermarket. Identify the type of relation between the fruit and the number sold.

Input, Fruit	Apple	Apricot	Lemon	Orange	Papaya
Output, Number Sold	256	187	256	256	93

Course 3

Lesson 6.1 Understanding Functions and Relationships Day 1

Draw a mapping diagram to represent each relation. Then identify each type of relation.

7 The table shows the numbers of various types of fruit sold in a supermarket. Draw a mapping diagram to represent the relation between each fruit and the number sold by the supermarket. Identify the type of relation between the fruit and the number sold.
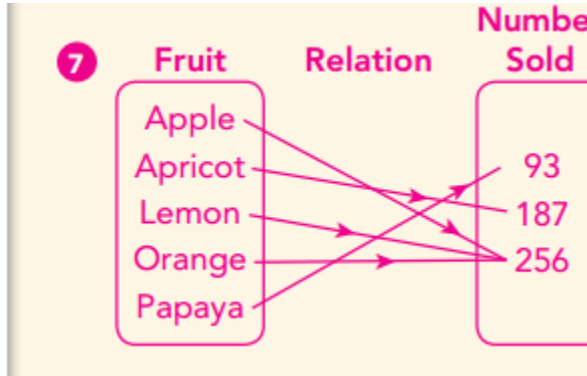See margin for mapping diagram; Many-to-one relation

Input, Fruit	Apple	Apricot	Lemon	Orange	Papaya
Output, Number Sold	256	187	256	256	93

7 Fruit   Relation   Number Sold

Apple
Apricot   93
Lemon   187
Orange   256
Papaya

Lesson 6.1 Understanding Functions and Relationships Day 1

8 The table shows the scores of a soccer team playing in eight different games. Each game is represented by a number.

Input, Score	3	2	1	0	2	1	3	2
Output, Game	1	2	3	4	5	6	7	8

Draw a mapping diagram to represent the relation between the score for each game and the game number. Identify the type of relation between the score and the game number.

Lesson 6.1 Understanding Functions and Relationships Day 1

8 The table shows the scores of a soccer team playing in eight different games. Each game is represented by a number.

Input, Score	3	2	1	0	2	1	3	2
Output, Game	1	2	3	4	5	6	7	8

Draw a mapping diagram to represent the relation between the score for each game and the game number. Identify the type of relation between the score and the game number. **See margin for mapping diagram; One-to-many relation**
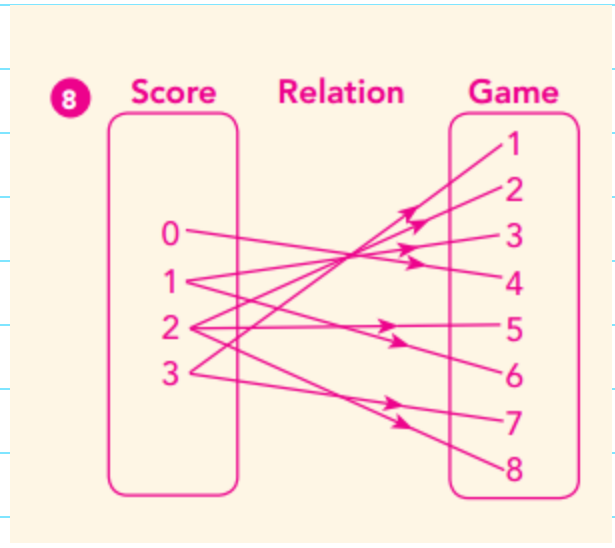

8 Score   Relation   Game

Ticket Out the Door- Connect, Extend, Challenge

1. How are the ideas and information presented CONNECTED to what you already knew?

2. What new ideas did you get that EXTENDED or pushed your thinking in new directions?

3. What is still CHALLENGING or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?