

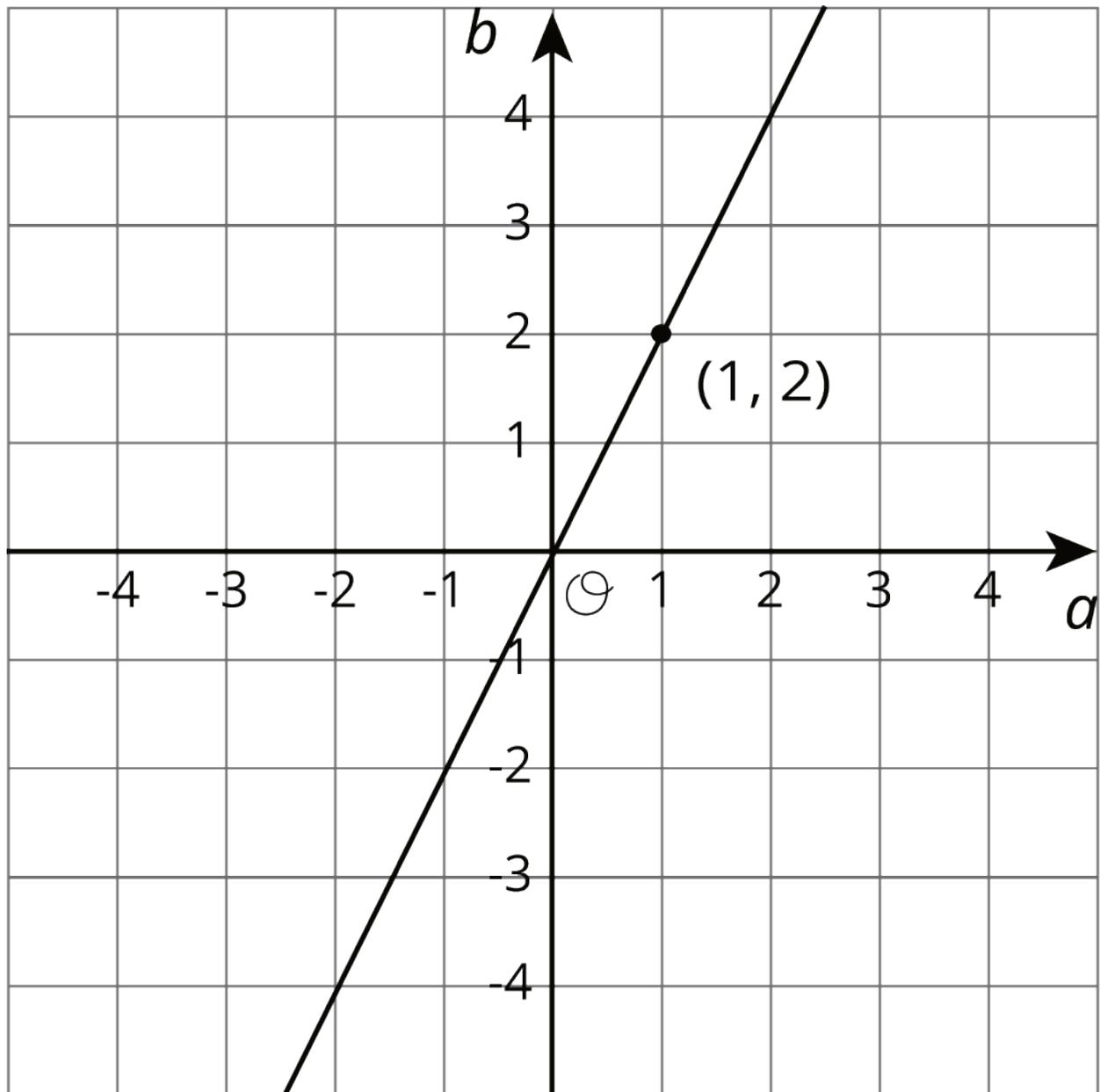
Unit 6 Lesson 7: Connecting Representations of Functions

1 Which are the Same? Which are Different? (Warm up)

Student Task Statement

Here are three different ways of representing functions. How are they alike? How are they different?

$$y = 2x$$

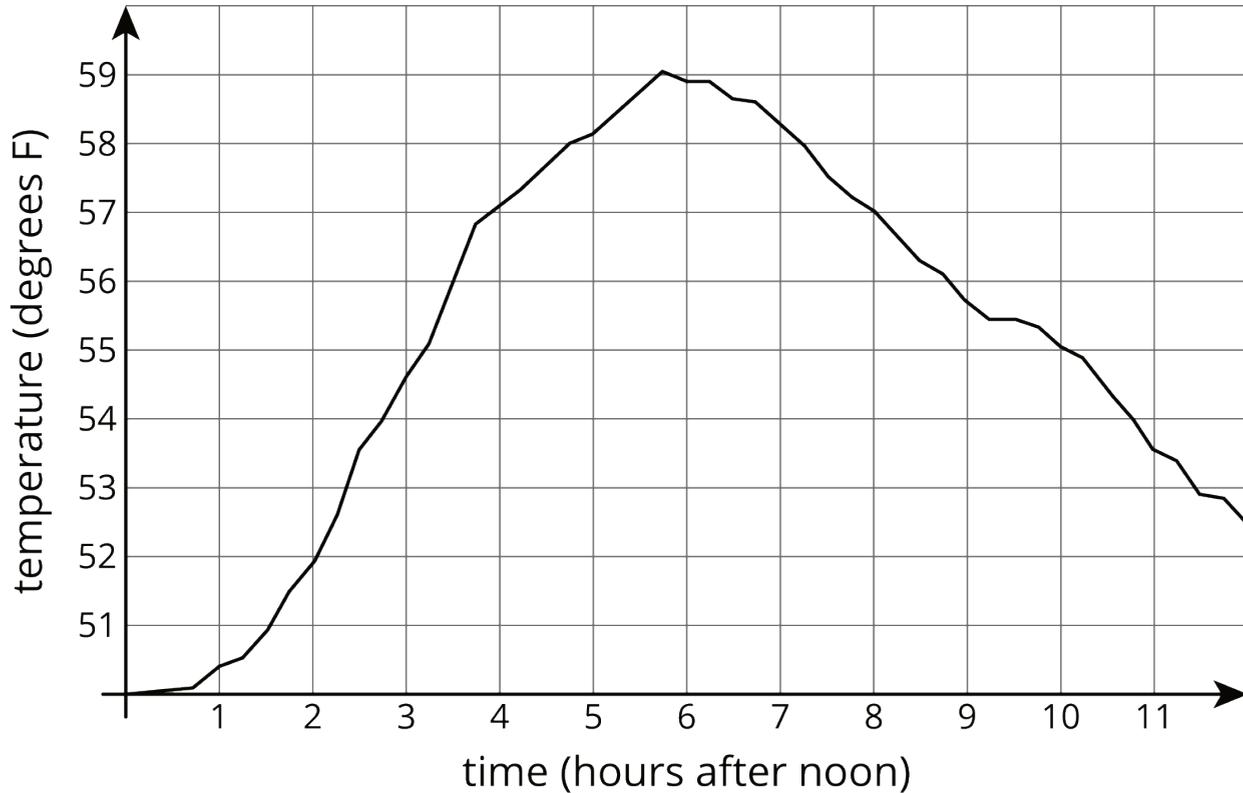


p	-2	-1	0	1	2	3
q	4	2	0	-2	-4	-6

2 Comparing Temperatures

Student Task Statement

The graph shows the temperature between noon and midnight in City A on a certain day.



The table shows the temperature, T , in degrees Fahrenheit, for h hours after noon, in City B.

h	1	2	3	4	5	6
T	82	78	75	62	58	59

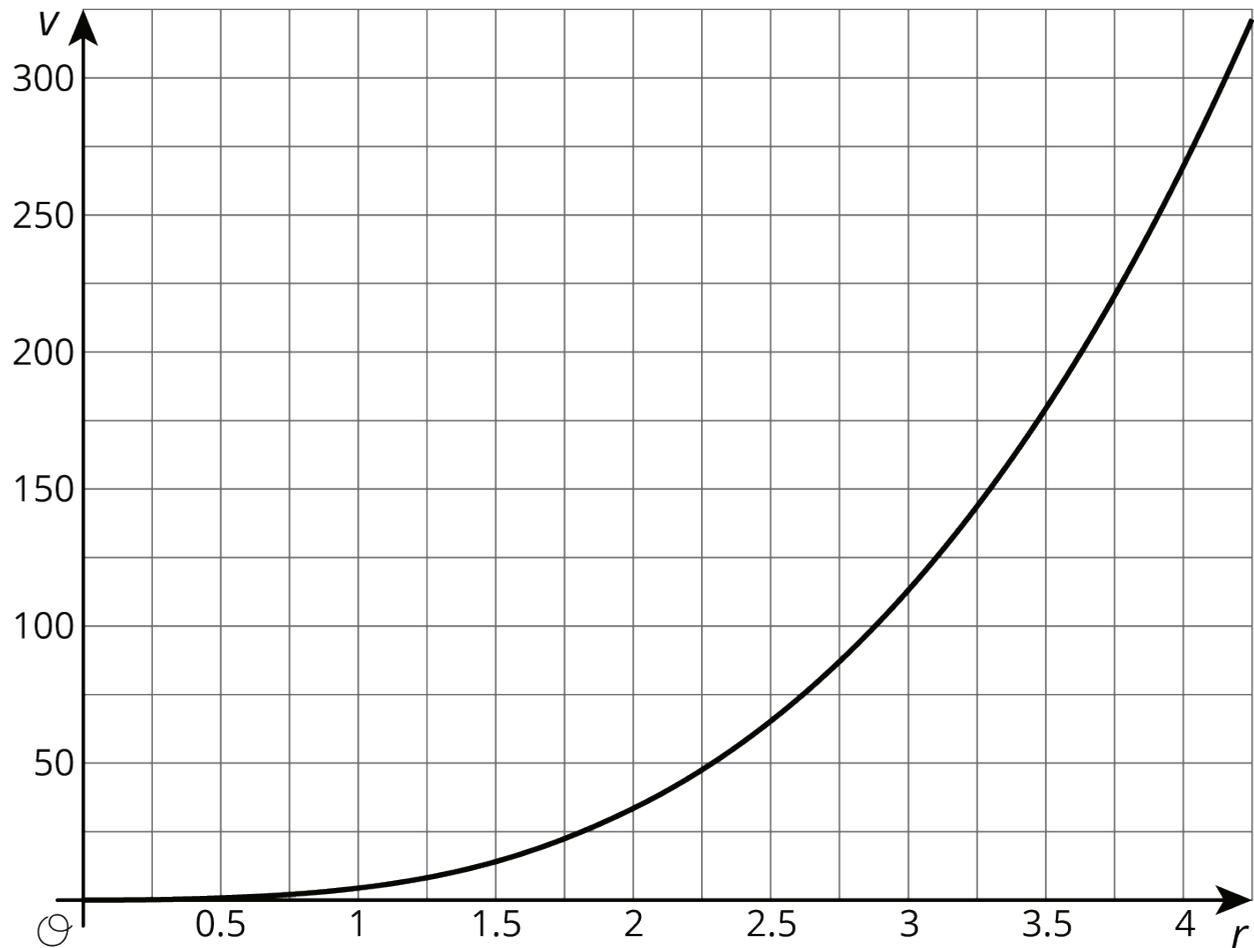
1. Which city was warmer at 4:00 p.m.?
2. Which city had a bigger change in temperature between 1:00 p.m. and 5:00 p.m.?
3. How much greater was the highest recorded temperature in City B than the highest recorded temperature in City A during this time?
4. Compare the outputs of the functions when the input is 3.

3 Comparing Volumes

Student Task Statement

The volume, V , of a cube with edge length s cm is given by the equation $V = s^3$.

The volume of a sphere is a function of its radius (in centimeters), and the graph of this relationship is shown here.



1. Is the volume of a cube with edge length $s = 3$ greater or less than the volume of a sphere with radius 3?
2. If a sphere has the same volume as a cube with edge length 5, estimate the radius of the sphere.
3. Compare the outputs of the two volume functions when the inputs are 2.

4 It's Not a Race (Optional)

Student Task Statement

Elena's family is driving on the freeway at 55 miles per hour.

Andre's family is driving on the same freeway, but not at a constant speed. The table shows how far Andre's family has traveled, d , in miles, every minute for 10 minutes.

t	1	2	3	4	5	6	7	8	9	10
d	0.9	1.9	3.0	4.1	5.1	6.2	6.8	7.4	8	9.1

1. How many miles per minute is 55 miles per hour?
2. Who had traveled farther after 5 minutes? After 10 minutes?
3. How long did it take Elena's family to travel as far as Andre's family had traveled after 8 minutes?
4. For both families, the distance in miles is a function of time in minutes. Compare the outputs of these functions when the input is 3.