Name _____

Date _____ Pd. _____

Notes: Relations – Day 1

A _____ is a set of ordered pairs. A relation can be represented by a set of ordered pairs, a table, a graph, or a _____. A mapping illustrates how each element of the domain is paired with an element in the range.

Example 1 **Express the relation {(1, 1), (0, 2), (3, −2)} as a table, a graph, and a mapping. State the domain and range of the relation.**

Example 2 **A person playing racquetball uses 4 calories per hour for every pound he or she weighs.**

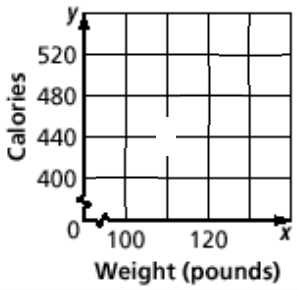
a. Make a table to show the relation between weight and calories burned in one hour for people weighing 100, 110, 120, and 130 pounds.

Source: *The Math Teacher's Book of Lists*

b. Give the domain and range.

domain: {100, 110, 120, 130}
range: {400, 440, 480, 520}

c. Graph the relation.



The _____ of any relation is obtained by switching the coordinates in each ordered pair.

Example **Express the relation shown in the mapping as a set of ordered pairs. Then write the inverse of the relation.**

Name _____

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Notes: Relations – Day 2

Point	An exact _____ in space.
Ordered Pair	A set of numbers or _____ used to locate any point on a coordinate plane, written in the form _____.
Relation	A set of _____ pairs.
Table of Values	An _____ list of values for a given function.

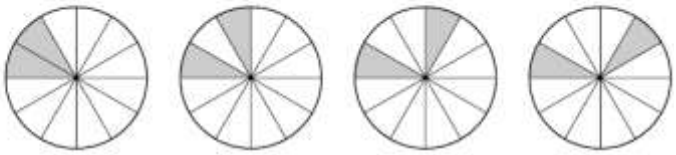
Domain	The set of the _____ of the ordered pairs in a relation.
Range	The set of _____ of the ordered pairs in a relation.
Increasing	Values of *y*-coordinates get _____ as *x*-coordinates get larger.
Decreasing	Values of *y*-coordinates get _____ as *x*-coordinates get larger.
Continuous	A line with no _____, no _____, or no _____. It can be created without lifting your pencil.
Discrete	_____, made up of distinct parts.

Name _____

Date _____ Pd. _____

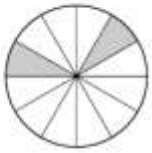
Exit Card: Relations

1. Look at the pattern below.

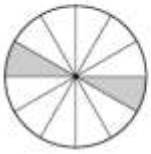


If this pattern continues, what will be the next figure?

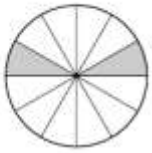
F



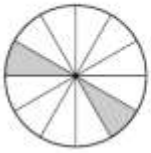
H



G



J



2. Aisha used squares to make the pattern of figures below.

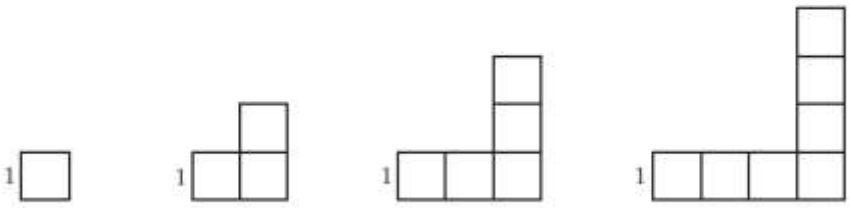


Figure 1 Figure 2 Figure 3 Figure 4

Complete the following in the Answer Book:

- Using the pattern, draw Figure 5 and Figure 6

- Write an expression that can be used to determine the perimeter of the *n*th figure in this pattern.

Name _____

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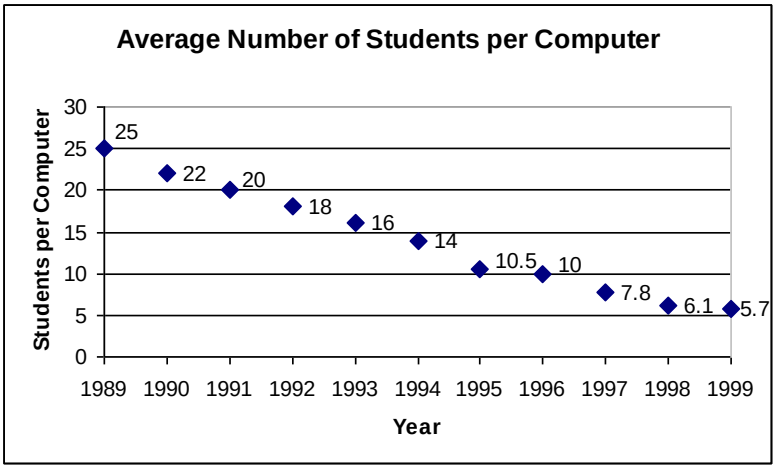
Homework: Pages 208 – 209 (14 – 17, 19, 27, 29, 30, 39, 40)

14. Name three ordered pairs from the graph.

15. Determine the domain of the relation.

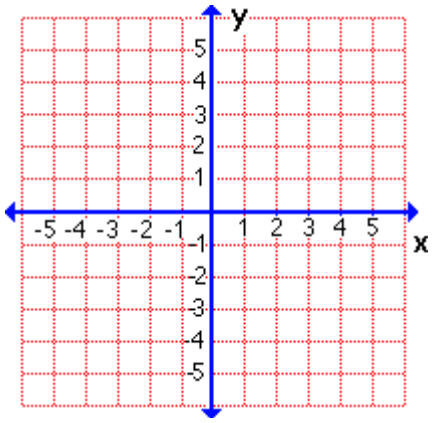
For Problems 14 – 17

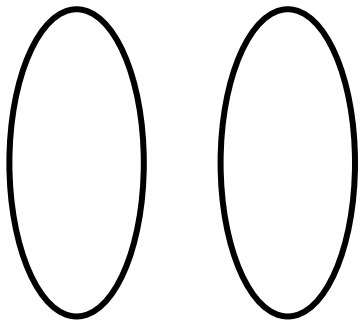


16. What are the least value and the greatest value in the range?

17. What conclusions can you make from the graph of the data?

19. Express as a table, a graph, and a mapping.
{ (5, 2), (-5, 0), (6, 4), (2, 7) }

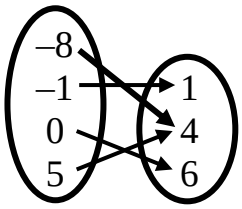




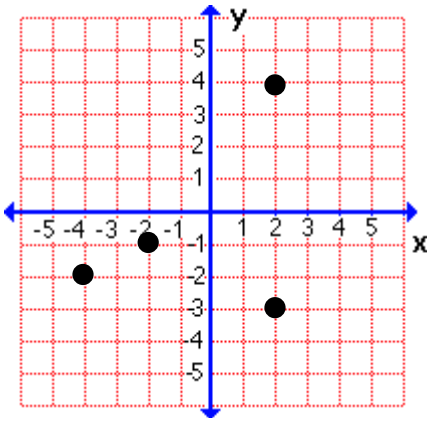
27. Express the relation as a set of ordered pairs. Then write the inverse of the relation.

x	*y*
0	3
-5	2
4	7
-3	2

29. Express the relation as a set of ordered pairs. Then write the inverse of the relation.



30. Express the relation as a set of ordered pairs. Then write the inverse of the relation.



39. Write the inverse as a set of ordered pairs.

40. How could you estimate your altitude by finding the boiling point of water at your location?

Altitude	Boiling Point
0	212.0
1,000	210.2
2,000	208.4
3,000	206.5
5,000	201.9
10,000	193.7