Objectives

The student will be able to:

1. identify the domain and range of a relation.
2. show relations as sets and mappings.

SOL: A.7bf

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How about some more definitions?

The **domain** is the

set of 1st coordinates of the ordered pairs.

The **range** is the

set of 2nd coordinates of the ordered pairs.

A **relation** is a

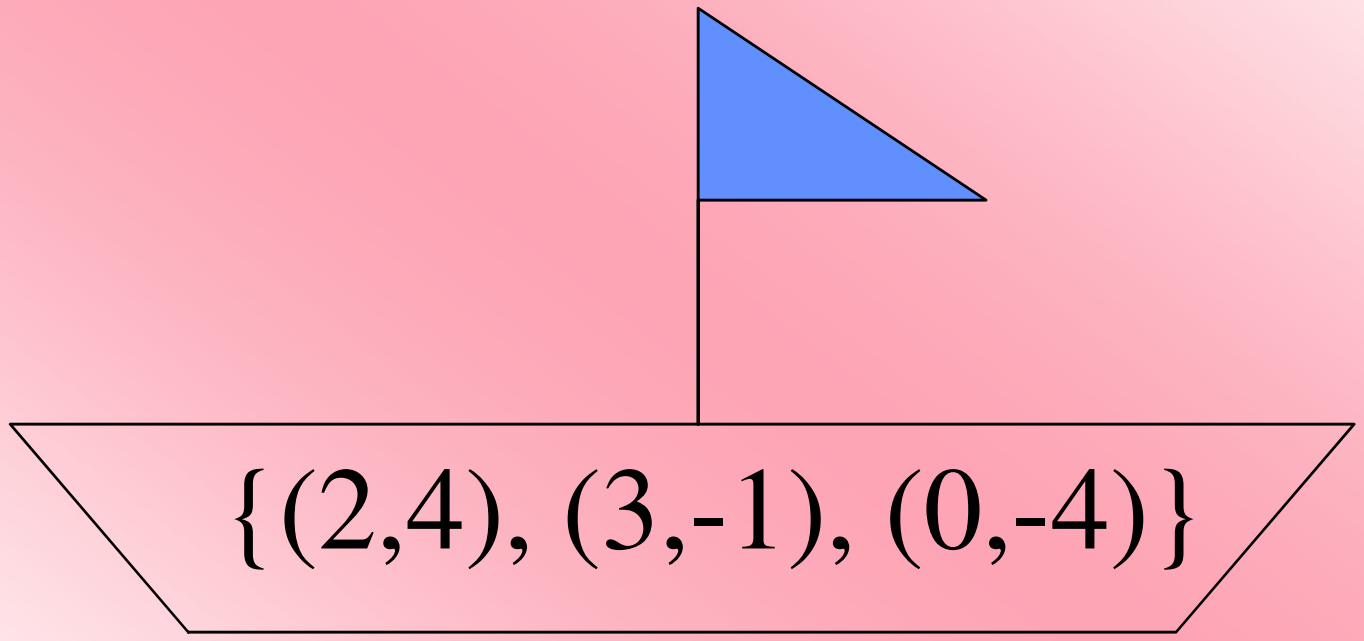
set of ordered pairs.

Given the relation
{(3,2), (1,6), (-2,0)},
find the domain and range.

Domain = **{3, 1, -2}**

Range = **{2, 6, 0}**

What would this be?



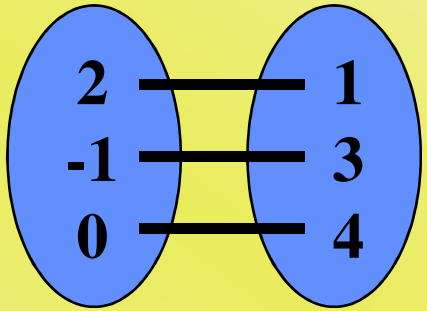
A bad relationship!! Ha! Ha!

The relation {(2,1), (-1,3), (0,4)} can be shown by

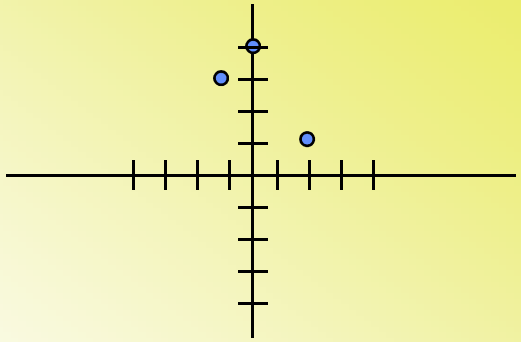
1) a table.

x	y
2	1
-1	3
0	4

2) a mapping.



3) a graph.



Given the following table, show the relation, domain, range, and mapping.

x	-1	0	4	7
y	3	6	-1	3

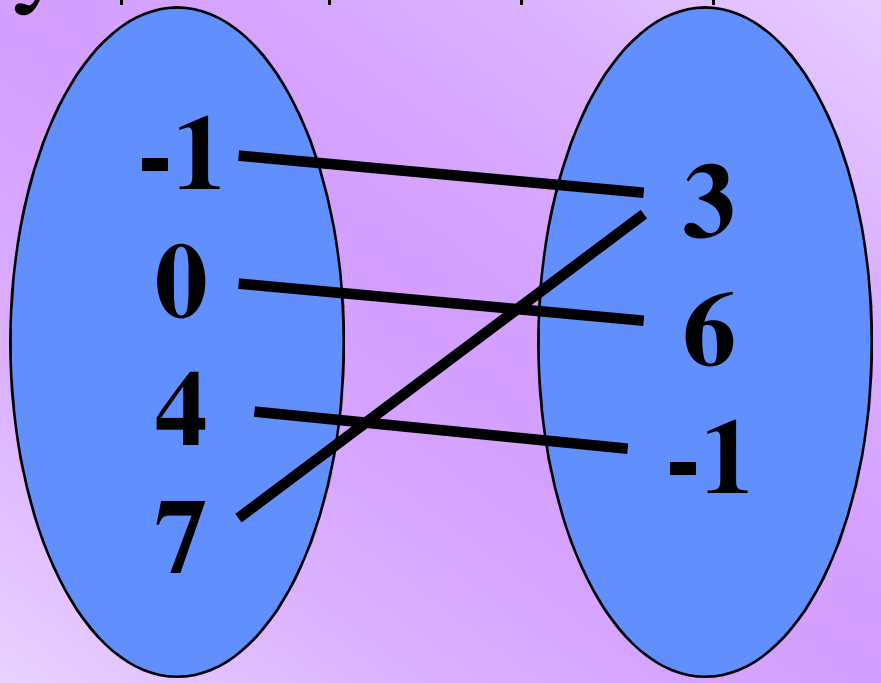
Relation = **{(-1,3), (0,6), (4,-1), (7,3)}**

Domain = **{-1, 0, 4, 7}**

Range = **{3, 6, -1, 3}**

Mapping

x	-1	0	4	7
y	3	6	-1	3



You do not need to write 3 twice in the range!

What is the domain of the relation {(2,1), (4,2), (3,3), (4,1)}

1. {2, 3, 4, 4}
2. {1, 2, 3, 1}
3. ✓ {2, 3, 4}
4. {1, 2, 3}
5. {1, 2, 3, 4}

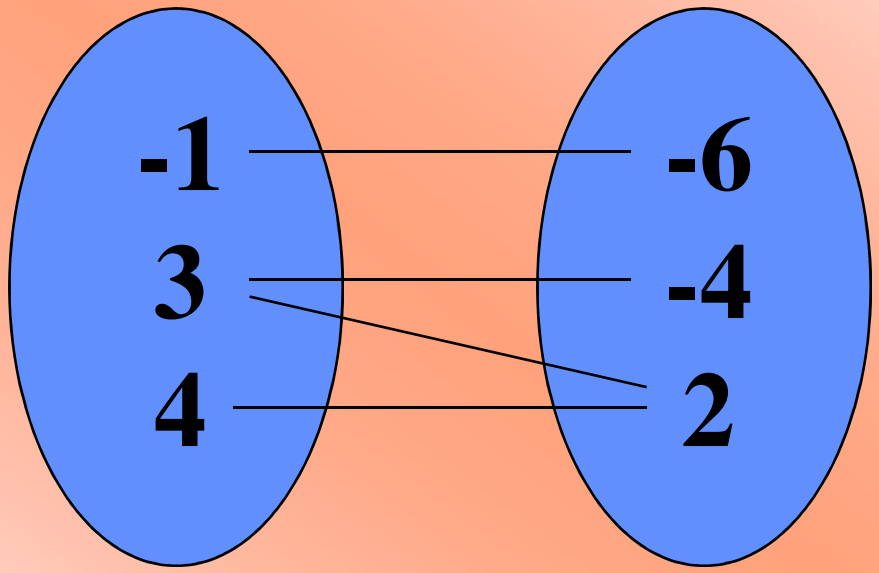
Answer Now

What is the range of the relation {(2,1), (4,2), (3,3), (4,1)}

1. {2, 3, 4, 4}
2. {1, 2, 3, 1}
3. {2, 3, 4}
4. ✓ {1, 2, 3}
5. {1, 2, 3, 4}

Answer Now

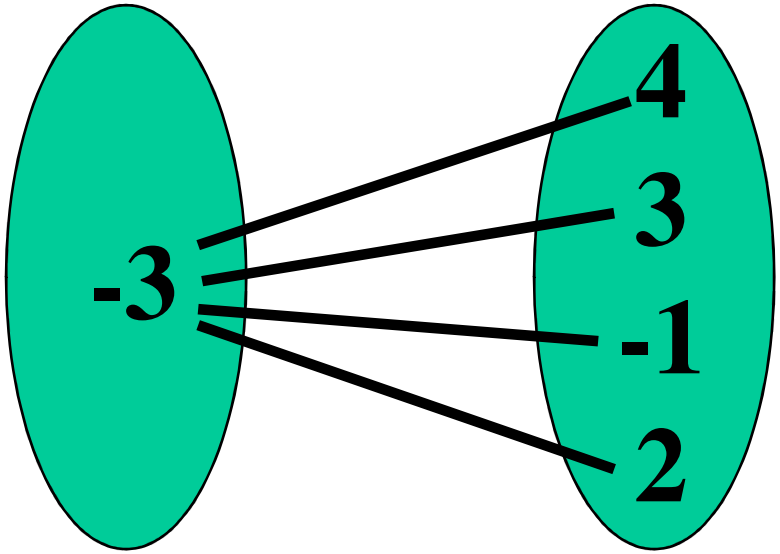
Inverse of a Relation: For every ordered pair (x,y) there must be a (y,x). Write the relation and the inverse.



Relation = **{(-1,-6), (3,-4), (3,2), (4,2)}**

Inverse = **{(-6,-1), (-4,3), (2,3), (2,4)}**

Write the inverse of the mapping.



1. {(4,-3),(2,-3),(3,-3),(-1,-3)}
2. {(-3,4),(-3,3),(-3,-1),(-3,2)}
3. {-3}
4. {-1, 2, 3, 4}

Answer Now