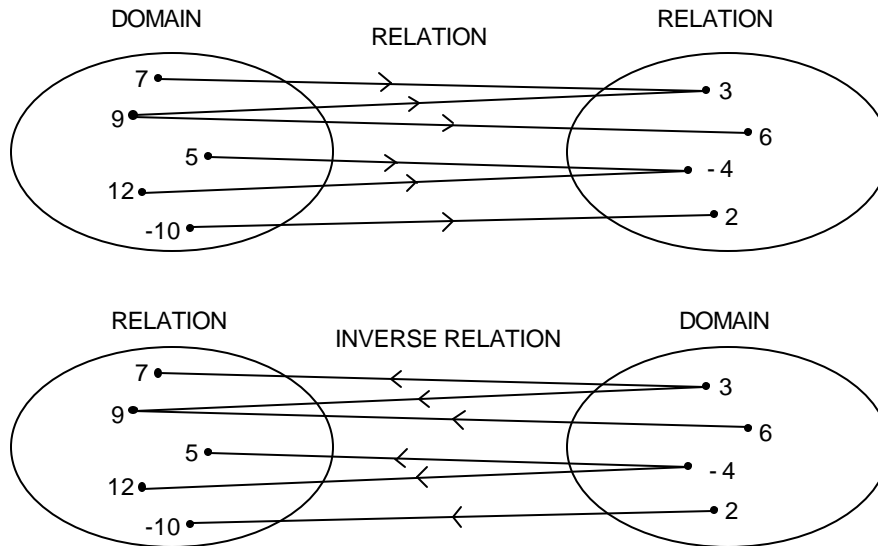


INVERSE RELATIONS

- An *inverse relation* is obtained by interchanging the elements of each ordered pair.

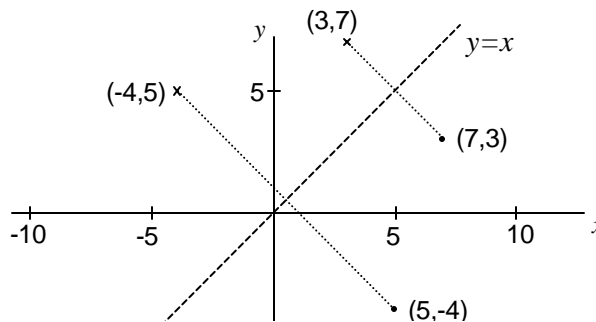
eg. consider the relation $\{(7,3), (5,-4), (9,3), (-10,2), (12,-4), (9,6)\}$

the inverse relation is $\{(3,7), (-4,5), (3,9), (2,-10), (-4,12), (6,9)\}$



The domain and range have been interchanged.

- The graphs of a relation and its inverse are *reflections in the line* $y = x$.



- An *equation for the inverse relation* is obtained by *interchanging* x and y .

eg. consider the relation $y^2 = 12x$, the inverse relation is $x^2 = 12y$

- The inverse of a $1 : 1$ relation is a $1 : 1$ relation.
- The inverse of a $1 : n$ relation is a $n : 1$ relation.
- The inverse of a $n : 1$ relation is a $1 : n$ relation.
- The inverse of a $n : n$ relation is a $n : n$ relation.

