## More on Relations

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values
Definition: The range of a relation is the set of $y$-values

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values
Definition: The range of a relation is the set of $y$-values
Definition: A function is a relation so that no two pairs have the same $x$-value. That is, no $x$-value shows up twice.

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values
Definition: The range of a relation is the set of $y$-values
Definition: A function is a relation so that no two pairs have the same $x$-value. That is, no $x$-value shows up twice.
Example 3: The following set of ordered pairs on the circle of radius 2 and center at the origin is a relation:

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values
Definition: The range of a relation is the set of $y$-values
Definition: A function is a relation so that no two pairs have the same $x$-value. That is, no $x$-value shows up twice.
Example 3: The following set of ordered pairs on the circle of radius 2 and center at the origin is a relation:


## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values Definition: The range of a relation is the set of $y$-values
Definition: A function is a relation so that no two pairs have the same $x$-value. That is, no $x$-value shows up twice.
Example 3: The following set of ordered pairs on the circle of radius 2 and center at the origin is a relation:


Domain $=[-2,2]$

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values Definition: The range of a relation is the set of $y$-values Definition: A function is a relation so that no two pairs have the same $x$-value. That is, no $x$-value shows up twice.
Example 3: The following set of ordered pairs on the circle of radius 2 and center at the origin is a relation:


Domain $=[-2,2]$
Range $=[-2,2]$

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values
Definition: The range of a relation is the set of $y$-values
Definition: A function is a relation so that no two pairs have the same $x$-value. That is, no $x$-value shows up twice.
Example 3: The following set of ordered pairs on the circle of radius 2 and center at the origin is a relation:


Domain $=[-2,2]$
Range $=[-2,2]$
This relation is not a function

## More on Relations

Definition: A relation is a set of ordered pairs $(x, y)$
Definition: The domain of a relation is the set of $x$-values
Definition: The range of a relation is the set of $y$-values
Definition: A function is a relation so that no two pairs have the same $x$-value. That is, no $x$-value shows up twice.
Example 3: The following set of ordered pairs on the circle of radius 2 and center at the origin is a relation:


Domain $=[-2,2]$
Range $=[-2,2]$
This relation is not a function

