

Name: _____ Period: _____ Date: _____

Formalizing Relations and Functions Assignment

Identify the domain and range of each relation. Use a mapping diagram to determine whether the relation is a function or not.

1. $R = \{(2,4),(8,11),(9,4),(4,2)\}$

2. $R = \{(-4,-1),(1,-2),(-4,3),(-1,-6)\}$

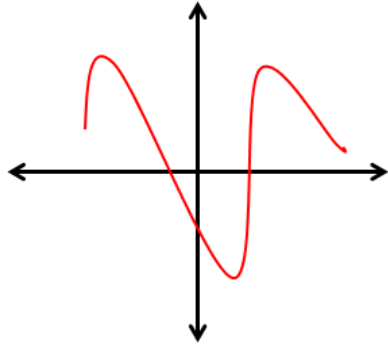
3. $R = \{(5,2.2),(3,2.6),(1,2.6),(0,2.5)\}$

4. $R = \{(0.3,0.6),(0.3,0.7),(0.4,0.8)\}$

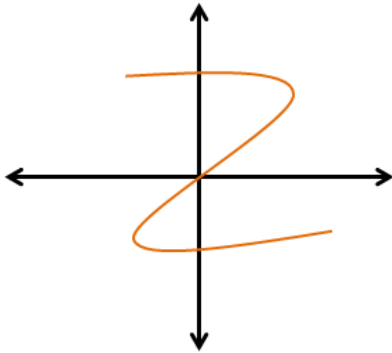
Formalizing Relations and Functions Assignment

Use the vertical line test to determine whether the relation is a function.

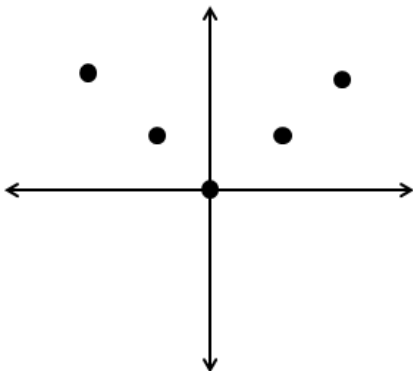
1.



2.



3.



Formalizing Relations and Functions Assignment

Find the range of each function given its domain.

1. $f(x) = 4x + 3$; $\{-2, -1, 0, 3, 4\}$

Range:

2. $f(x) = x^2 - 5$; $\{-2, 1, 0, 2\}$

Range:

3. $f(x) = x^3 + 12$; $\{-3, -1, 1, 2\}$

Range:

Formalizing Relations and Functions Assignment

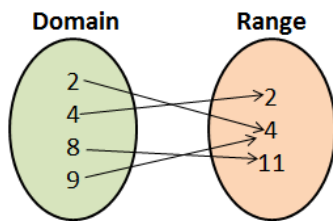
Identify the domain and range of each relation. Use a mapping diagram to determine whether the relation is a function or not.

1. $R = \{(2,4),(8,11),(9,4),(4,2)\}$

Domain: $\{2,4,8,9\}$

Range: $\{2,4,11\}$

Mapping diagram:



Relation R

Relation $R = \{(2,4),(8,11),(9,4),(4,2)\}$

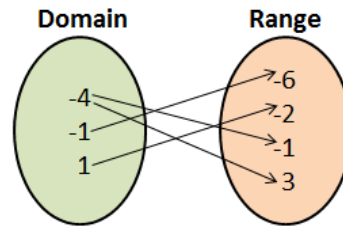
It is a function

2. $R = \{(-4,-1),(1,-2),(-4,3),(-1,-6)\}$

Domain: $\{-4,-1,1\}$

Range: $\{-6,-2,-1,3\}$

Mapping diagram:



Relation R

Relation $R = \{(-4,-1),(1,-2),(-4,3),(-1,-6)\}$

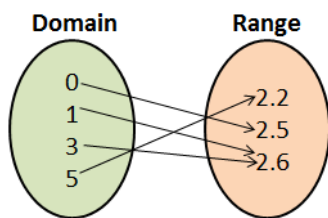
It is not a function

3. $R = \{(5,2.2),(3,2.6),(1,2.6),(0,2.5)\}$

Domain: $\{0,1,3,5\}$

Range: $\{2.2,2.5,2.6\}$

Mapping diagram:



Relation R

Relation $R = \{(5,2.2),(3,2.6),(1,2.6),(0,2.5)\}$

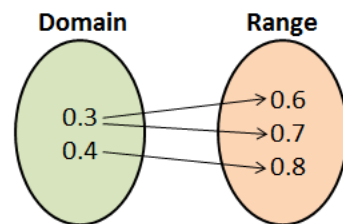
It is a function

4. $R = \{(0.3,0.6),(0.3,0.7),(0.4,0.8)\}$

Domain: $\{0.3,0.4\}$

Range: $\{0.6,0.7,0.8\}$

Mapping diagram:



Relation R

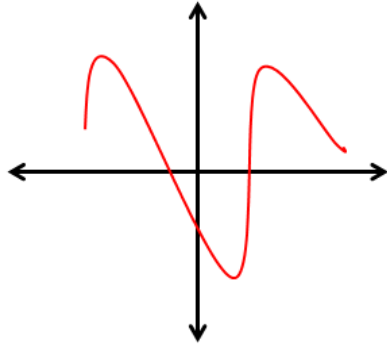
Relation $R = \{(0.3,0.6),(0.3,0.7),(0.4,0.8)\}$

It is not a function

Formalizing Relations and Functions Assignment

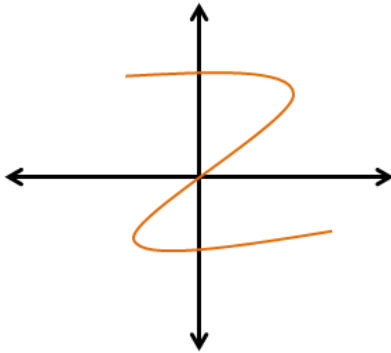
Use the vertical line test to determine whether the relation is a function.

1.



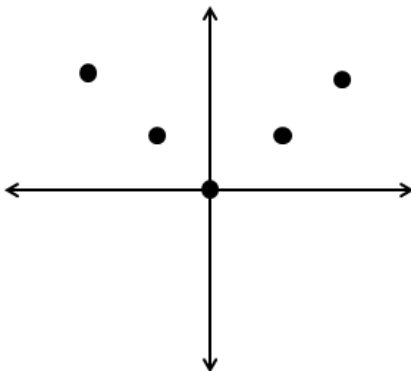
It is a function since any vertical line passes through only 1 point on the function.

2.



It is not a function since some vertical lines pass through more than 1 point on the function.

3.



It is a function since any vertical line passes through only 1 point on the function.

Formalizing Relations and Functions Assignment

Find the range of each function given its domain.

1. $f(x) = 4x + 3$; $\{-2, -1, 0, 3, 4\}$

Range: $\{-5, -1, 3, 15, 19\}$

2. $f(x) = x^2 - 5$; $\{-2, 1, 0, 2\}$

Range: $\{-1, -4, -5, -1\}$

3. $f(x) = x^3 + 12$; $\{-3, -1, 1, 2\}$

Range: $\{-15, 11, 13, 20\}$