

Coordinate Plane, Functions, Domain and Range Homework

1. In what quadrant are the following points located.

- | | |
|------------|--------------|
| a) (-6,3) | <u>Q II</u> |
| b) (7,-10) | <u>Q IV</u> |
| c) (-4,-4) | <u>Q III</u> |
| d) (-18,5) | <u>Q I</u> |

2. Determine whether each of the relations below are a function or not. Then, using proper set notation, state the domain and range. If necessary, draw a mapping diagram on the back side of this sheet of paper.

A) $\{(1,9), (8,1), (7,5), (8,5)\}$
Function? No.

Domain: $\{1,7,8\}$

Range: $\{1,5,9\}$

B) $\{(a,a), (b,a), (c,a), (d,a)\}$
Function? Yes.

Domain: $\{a,b,c,d\}$

Range: $\{a\}$

C) $\{(1,2), (3,4), (5,6), (7,8), (9,13)\}$
Function? Yes.

Domain: $\{1,3,5,7,9\}$

Range: $\{2,4,6,8,13\}$

D) $\{(7,1), (10,7), (0,8), (2,17), (7,3)\}$
Function? No.

Domain: $\{0,2,7,10\}$

Range: $\{1,3,7,8,17\}$

E) $\{(1,1), (1/2, 2), (1/3, 3), (1/4, 4)\}$
Function? Yes.

Domain: $\{1,1/2,1/3,1/4\}$

Range: $\{1,2,3,4\}$

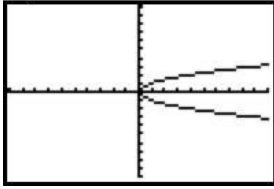
F) $\{(4,2), (9,3), (4,-2), (9,-3)\}$
Function? No.

Domain: $\{4,9\}$

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

Continue on to the next page to see the graphs.

(G)

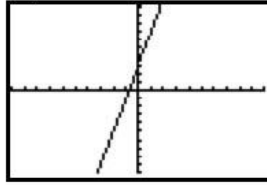


Function? No.

Domain: $\{x \mid x \geq 0\}$

Range: $\{y \mid y \in \mathbb{R}\}$

(H)

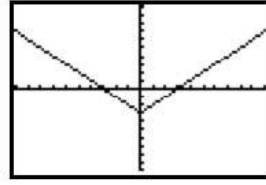


Function? Yes.

Domain: $\{x \mid x \in \mathbb{R}\}$

Range: $\{y \mid y \in \mathbb{R}\}$

(I)



Function? Yes.

Domain: $\{x \mid x \in \mathbb{R}\}$

Range: $\{y \mid y \geq -3\}$