

Worksheet 4.1 Relations and Functions

Relations Expressed as Ordered Pairs

Determine if the following relations are functions. Then state the domain and range.

1. $\{(1, -2), (-2, 0), (-1, 2), (1, 3)\}$

2. $\{(1, 1), (2, 2), (3, 5), (4, 10), (5, 15)\}$

Function: _____

Function: _____

Domain: _____

Domain: _____

Range: _____

Range: _____

3. $\left\{ \left(17, \frac{15}{4} \right), \left(\frac{15}{4}, 17 \right), \left(15, \frac{17}{4} \right), \left(\frac{17}{4}, 15 \right) \right\}$

4. $\left\{ \left(-3, \frac{2}{5} \right), \left(-3, \frac{3}{5} \right), \left(\frac{3}{2}, -5 \right), \left(5, \frac{2}{5} \right) \right\}$

Function: _____

Function: _____

Domain: _____

Domain: _____

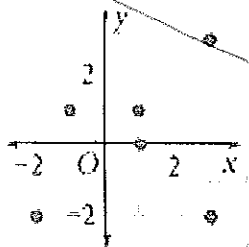
Range: _____

Range: _____

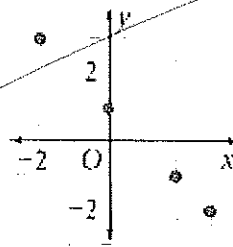
Relations Expressed as Graphing

Write each of the following as a relation, state the domain and range, then determine if it is a function.

5.



6.



Relation: _____

Relation: _____

Domain: _____

Domain: _____

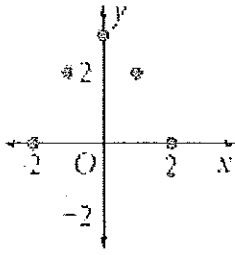
Range: _____

Range: _____

Function: _____

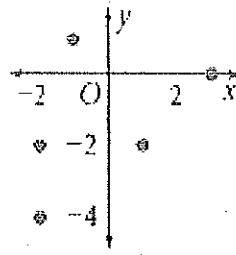
Function: _____

7.



Relation: _____
 Domain: _____
 Range: _____
 Function: _____

8.



Relation: _____
 Domain: _____
 Range: _____
 Function: _____

Relations Expressed as Mappings

Express the following relations as a mapping, state the domain and range, then determine if is a function.

9. $\{(-2, -1), (0, 3), (5, 4), (-2, 3)\}$

10. $\{(-1, 5), (0, 3), (2, 3), (3, -1)\}$

Domain: _____
 Range: _____
 Function: _____

Domain: _____
 Range: _____
 Function: _____

11. $\{(-1, 7), (0, -3), (1, 10), (0, 7)\}$

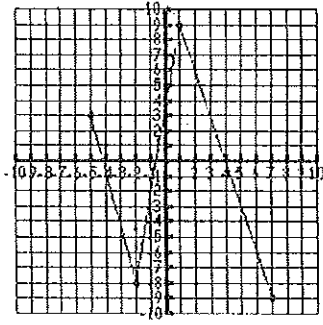
12. $\left\{\left(\frac{1}{2}, 2\right), \left(\frac{1}{4}, 2\right), \left(\frac{1}{8}, 2\right), \left(\frac{-1}{2}, 2\right)\right\}$

Domain: _____
 Range: _____
 Function: _____

Domain: _____
 Range: _____
 Function: _____

Determine if the graph is a function, then state the domain and range.

13.

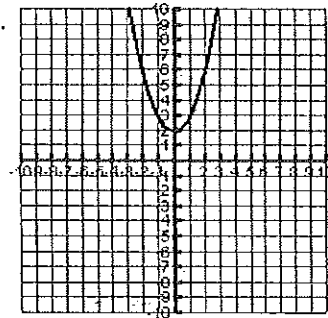


Domain: _____

Range: _____

Function: _____

14.

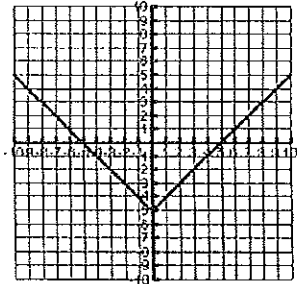


Domain: _____

Range: _____

Function: _____

15.

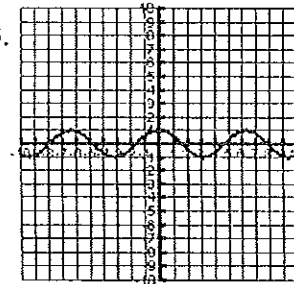


Domain: _____

Range: _____

Function: _____

16.

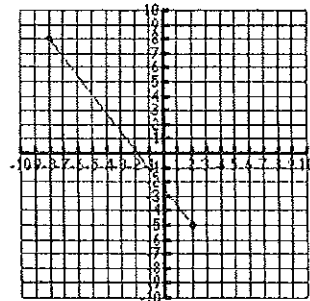


Domain: _____

Range: _____

Function: _____

17.

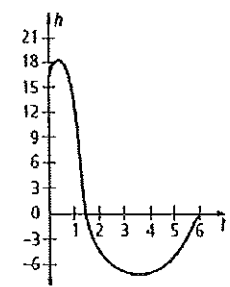


Domain: _____

Range: _____

Function: _____

18.



Domain: _____

Range: _____

Function: _____