**Functions, Domain, and Range Extra Practice**

**Part 1: State whether or not each relation represents a function. Support your choice.**

**Part 2: Determine the domain and range of each relation. Express your answer in all possible notations based on the situation.**

|  |  |  |
| --- | --- | --- |
| 1.  | 2.  | 3. |
| 4.  | 5.  | 6.  y = |2x-1| + 2 |
| 7.  | 8.  | 9.  |
| 10.  x = -3 | 11.  | 12. the distance you traveled after t minutes of walking consistently (not stopping) outside  |

Solutions:

1. Function; each input maps to only one output

Domain: {4, 5, 6} Range: {6}

2. Function; each input maps to only one output

Domain: {-4, 0, 1, 2, 3} Range: {5, 6, 7}

3. Not a function; some inputs map to more than one output (for example, when x = 0, y = -1.5 and y = 1.5)

Domain:  OR  Range: all real numbers, 

4. Function; each input maps to only one output

Domain: all real numbers,  Range: all real numbers, 

5. Function; each input maps to only one output

Domain: all real numbers,  Range: all real numbers, 

6. Function; each input maps to only one output

Domain: all real numbers,  Range: all real numbers, 

7. Function; each input maps to only one output

Domain: all real numbers,  Range:  OR 

8. Function; each input maps to only one output

Domain: {-4, -2, 2, 4, 5} Range: {-3, 2, 4, 5}

9. Function; each input maps to only one output

Domain: all real numbers,  Range: {2}

10. Not a function; this will be a vertical line where x = 3, meaning that x = 3 maps to infinitely many outputs (would not pass Vertical Line Test)

Domain: {-3} Range: all real numbers, 

11. Not a function; -4 maps to both 3 and 5

Domain: {-4, 0, 2} Range: {3, 4, 5}

12. Function; each input maps to only one output because you will be a different distance at each minute

Domain:  OR  Range:  OR 