Algebra I
1-6
Represent Functions as Rules and Tables

Definitions

Function - A rule or a map that assigns each value of the domain to exactly one value of the range.

Domain - the set of all possible inputs.

Range - the set of all possible outputs

Independent Variable - represents the input
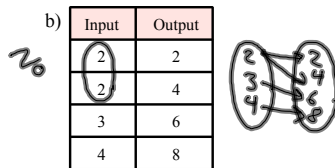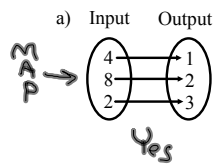
Dependent Variable - represents the output.

Examples

1) The input-output table shows the temperatures over various increments of time. Identify the domain and range of the function.

Input	0	2	4	6
Output	24	27	30	33

Domain: $\{0,2,4,6\}$

Range: $\{24,27,30,33\}$

2) Tell whether the pairing is a function. Explain.

a) Input   Output

MAP →

4 → 1
8 → 2
2 → 3

Yes

b)

Input	Output
2	2
2	4
3	6
4	8

No

Functions defined by a rule

Rule	Equation	Table					
The output is two less than the input.	$y = x - 2$	Input	2	4	6	8	10
		Output	0	2	4	6	8

Examples:

3) The domain of the function $y = 3x$ is $D = \{0,1,2,3\}$. Make a table for the function, then identify the range of the function.

x	0	1	2	3
$y = 3x$	0	3	6	9

Range: $\{0,3,6,9\}$

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4) Write a rule for the function.

Input	3	5	7	9	11
Output	6	10	14	18	22

Let x be the input and y be the output. Notice that each output is **twice** the corresponding input. So, a rule for the function is **$y = 2x$**.

Checkpoint

Write a rule for the function. Identify the domain and the range.

Yarn (yd)	1	2	3	4
Cost ($)	1.5	3	4.5	6

Rule $y = 1.5x$

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

Range $\{1.5,3,4.5,6\}$

Assignment:
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1, 2, 5 - 10,
12, 13, 16 - 18,
20, 21, 25, 28,
30, 31