Lesson 11: Relations, Functions, Linear Systems

Relations

Consider the linear equation $y = 3x + 2$.

When an 'x' is selected, it is 'plugged' into the equation and the results is a 'y'.
A set of ordered pairs that make this equation true is { (0,2), (1,5), (-1,-1)}

These ordered pairs form a **relationship**. The 1st value is called the **domain**. The 2nd value is called the **range**. A special type of relation is called a **function** if each element of the domain corresponds to exactly one element of the range.

Relation

Any set of **ordered pairs** is a **relation**.

1. Complete the table #1.

x	0	1	2	3	4	25		x
y	0	2	4	6			60	2x

Based on the table data, complete the set of ordered pairs:

{ (0,0), (1,2), (2,4), (3,6), (4,   ), (25,   ), (, 60) }

2. Complete the table #2.

x	0	1	2	3	4	10		x
y	1	4	7		13		22	

Based on the table data, complete the set of ordered pairs:

{ (0,1), (1,4), (2,7), (3,   ), (4, 13), (10,   ), (, 22) }

3. Complete the table #3.

Day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Letter	S	M	T	W	T	F	S

Based on the table data, complete both sets of ordered pairs:
Relation (day, letter)
{ (Sunday, S), (Monday, M), (Tuesday, T), (Wednesday, W), (Thursday, T), (Friday, F), (Saturday, S)}

Relation (letter, day)
{ (S, Sunday), (M, Monday), (T, Tuesday), (W, Wednesday), (T, Thursday), (F, Friday), (S, Saturday)}

All of the above are examples of RELATIONS.