**Introduction to Function Notation**

Jane works as a travel agent. Every week she gets paid $900 (her base salary) plus $100 for each cruise that she books (her commission). We can use a function to describe the relationship between her weekly salary and the number of cruises that she books.

1. Fill in the blanks below:

Jane’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ depends on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and every

number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gives only one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Therefore, we can say her \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a function of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Write a recursive rule to describe Jane’s weekly salary.
2. Let **S** be her weekly salary, and **c** be the number of cruises she books. Write an explicit rule to model Jane’s weekly salary based on the number of cruises she books.
3. Jane’s weekly salary is a function of number of cruises she books. We can use a special notation called function notation to label it. Instead of writing ***S*** alone as we did in the explicit rule, we write ***S*(*c*)**. Write ***S*(*c*)** below.
4. Let’s look at the parts of that notation, ***S***(**c**), which is read “**S of c**.” Fill in the table below.

|  |  |
| --- | --- |
| **S** is the: | **c** is the: |
| **S** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_variable | **c** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_variable |
| The parentheses hold the place for the input value, they do not signify multiplication! | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Complete the table below.  |  |  | | --- | --- | | **c** | ***S*(*c*)** | | 0 |  | | 1 |  | | 2 |  | | 3 |  | | 4 |  | | 5 |  | | 1. Graph the function on the axes below. Label the axes appropriately.   [image] |
| 1. Fill in the mapping diagram below.  |  |  |  | | --- | --- | --- | | 0  1  2  3  4  5 |  | 1100  900  1400  1000  1200  1300 |  1. What are the domain and range of this function? | |