

L5 Finding the Rule of the Linear function

A straight line always follows the RULE

$y = ax + b$

Where:

- y → is the Dependent variable

x → is the Independent variable

a → is the R.O.C.(slope)

b → is the initial value (y-intercept)

1

Steps to Finding the RULE given 2 points

Step 1: Find the slope using  $a = \frac{y_2 - y_1}{x_2 - x_1}$

Step 2: Find the y-intercept (b) by plugging the (x<sub>1</sub>,y<sub>1</sub>) coordinates into  $b = y_1 - ax_1$

Step 3: State the final equation.  
 $y = ax + b$

2

Ex1: Find the rule of the line going through (-6,5) & (-4, 6)

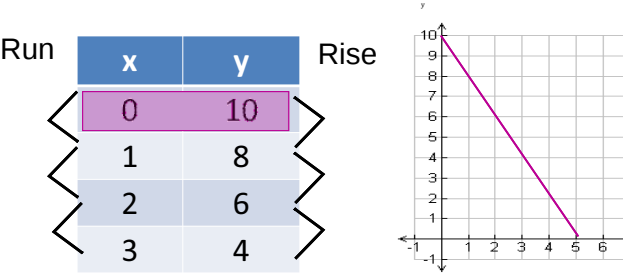
Step 1: Find a                      Step 2: Find b using (-6,5)

3

Ex 2: Find the rule of the line going through (-2,6) & (1, 3)

4

TOV Case 1- Both a and b are clear



a=      b=      y =

5

TOV Case 2- a is clear, must find b



a=      b=      y =

6

Practice:  
4.5 # 1-9



7

8

9

A table of values shows the relationship between two variables, typically x and y.

| time | height |
|------|--------|
| 0    | 1.5    |
| 1    | 3      |
| 2    | 4.5    |
| 3    | 6      |

We call

**x** the independent variable because we choose it.

**y** is the dependant variable because it depends on the chosen value of x.

10

TOV Case 3- **a** not clear and must find **b**

| Run | x  | y   | Rise |
|-----|----|-----|------|
| <   | 32 | 59  | >    |
| <   | 14 | 23  | >    |
| <   | 5  | 5   | >    |
| <   | 73 | 141 | >    |

Rise  
Run =

**a**=           **b**=           y =                 11