

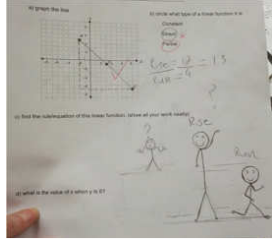
## 4.3 -A- Rate of change

- Rate of change (R.O.C) is also known as Rate of variation, Slope, and Rise over Run
- Given points  $A(x_1, y_1)$  &  $B(x_2, y_2)$  on a line, then the rate of change between points A & B is :

$$\text{R.O.C.} = \frac{\Delta y}{\Delta x} \quad ; \quad \Delta: \text{ difference or change in}$$

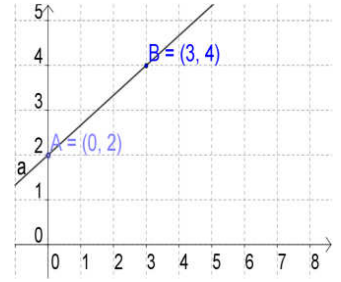
$$= \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{or} = \frac{\text{rise}}{\text{run}} \quad \text{if you have a graph}$$



**Ex 1:** Given points  $A(0,2)$  and  $B(3,4)$

$$\bullet \text{ R.O.C.} = \frac{\Delta y}{\Delta x}$$



$$\bullet \text{ Or Count } \frac{\text{rise}}{\text{run}} =$$

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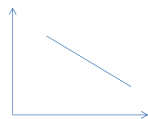
On any straight line all segments of the line will have the same slope

- 4 possible slopes are noted:

1. Positive slope :



2. Negative slope:



3. Zero slope:



4. Undefined slope:



3

**Ex 2:** Find the slope of each line on the grid:

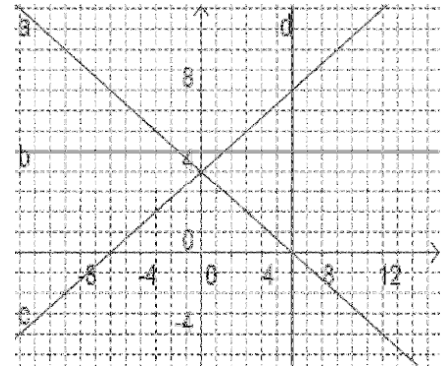
- Slope of line:

• a:

• b:

• c:

• d:



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**Ex 3:** Find the slope of the following:

1)  $A(3, 3)$   $B(2, 5)$

2)  $C(-1, 5)$   $D(4, 3)$

$$\frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

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**Practice:**  
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