LINEAR FUNCTION

This is a function defined by a polynomial of first degree that is written in the form:

EXPLICIT FORM y = mx + q **IMPLICIT FORM ax+by+c=0**

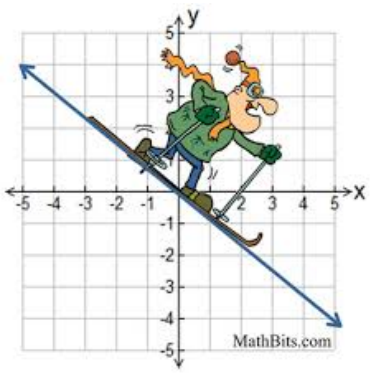
SLOPE | INTERCEPTS | SPECIAL LINES

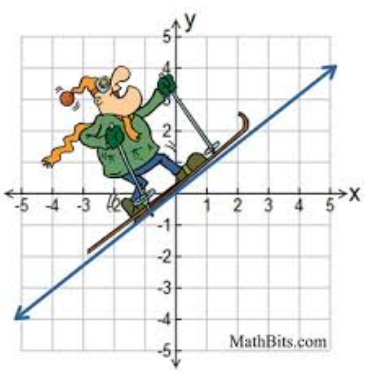
a) **m is the SLOPE of a line and expresses its inclination towards the x-axis. If the line is expressed like that:**

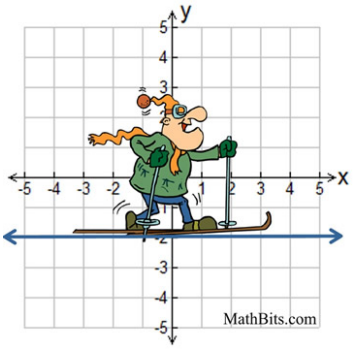
ax+by+c=0 => m=-a/b with b different from zero.

- **if m<o the slope is negative and the line goes downwards from the left to the right**
- **if m>o the slope is positive and the line goes upwards from the left to the right**
- **if m=0 the slope in null and the line is horizontal**

m<0 **m>0** **m=0**







Given the coordinates of two points on the line we can calculate the slope with by applyng this formula:

$m=(y_q-y_p)/(x_q-x_p)$ with $P(x_p;y_p)$ and $Q(x_q; y_q)$.

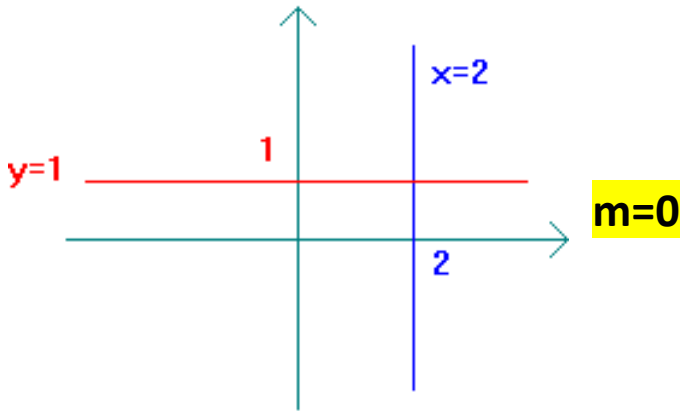
b) q is the INTERCEPT of a line and expresses the measure of the segment between the origin and its intersection point with the y-axis.

If the line is expressed like that: ax+by+c=0 => q=-c/b with b different from 0.

c) SPECIAL LINES

The two particular lines: $y=\pm k$ (m=0) and $x=\pm h$ ($m=\infty$) represent parallel lines to the x-axis or y-axis

$m=\infty$



The two particular lines: y=x and y=-x that are the bisectors of the first-third dial and the
second-fourth dial of the coordinate plane.

m=-1 m=1