Slope intercept form is y=mx+b, where m is slope and b is the y-intercept. We can use this form of a linear equation to draw the graph of that equation on the x-y coordinate plane.

It is the simplest form of conversion. First of all scan P1 and P2 points. P1 has co-ordinates (x1',y1') and (x2' y2' ).

**Then**      m = (y2',y1')/( x2',x1') and b =

If value of |m|≤1 for each integer value of x. But do not consider

If value of |m|>1 for each integer value of y. But do not consider

**Example:**A line with starting point as (0, 0) and ending point (6, 18) is given. Calculate value of intermediate points and slope of line.

**Solution:** P1 (0,0) P7 (6,18)

              x1=0  
              y1=0  
              x2=6  
              y2=18

M= delta y / delta x = y2-y1/x2-x1 = 18 - 0 / 6 - 0 = 3

We know equation of line is  
              y =m x + b  
              y = 3x + b..............equation (1)

put value of x from initial point in equation (1), i.e., (0, 0) x =0, y=0  
              0 = 3 x 0 + b  
              0 = b ⟹ b=0

put b = 0 in equation (1)  
              y = 3x + 0  
              y = 3x

Now calculate intermediate points  
    Let x = 1 ⟹ y = 3 x 1 ⟹ y = 3  
    Let x = 2 ⟹ y = 3 x 2 ⟹ y = 6  
    Let x = 3 ⟹ y = 3 x 3 ⟹ y = 9  
    Let x = 4 ⟹ y = 3 x 4 ⟹ y = 12  
    Let x = 5 ⟹ y = 3 x 5 ⟹ y = 15  
    Let x = 6 ⟹ y = 3 x 6 ⟹ y = 18

So points are P1 (0,0)  
              P2 (1,3)  
              P3 (2,6)  
              P4 (3,9)  
              P5 (4,12)  
              P6 (5,15)  
              P7 (6,18)

***Program***

| **#include<stdio.h>**  **#include<conio.h>**  **#include<graphics.h>**  **#include<math.h>**  **void main()**  **{**  **float m,x1,y1,x2,y2;**  **int x,y;**  **int gdriver=DETECT,gmode,gerror;**  **clrscr();**  **printf(" PROGRAM FOR THE LINE INTERCEPT \n");**  **printf(" Enter the value of x1");**  **scanf("%f",&x1);**  **printf(" Enter the value of y1");**  **scanf("%f",&y1);**  **printf(" Enter the value of x2");**  **scanf("%f",&x2);**  **printf(" Enter the value of y2");**  **scanf("%f",&y2);**  **initgraph(&gdriver,&gmode,"c:\\turboc3\\bgi");**  **m=(y2-y1)/(x2-x1);**  **for(x=1;x<=x2;x++)**  **{**  **y=m\*(x-x1)+y1;**  **putpixel(x,y,15);**  **delay(50);**  **}**  **getch();**  **closegraph();**  **}** |
| --- |

***Output***