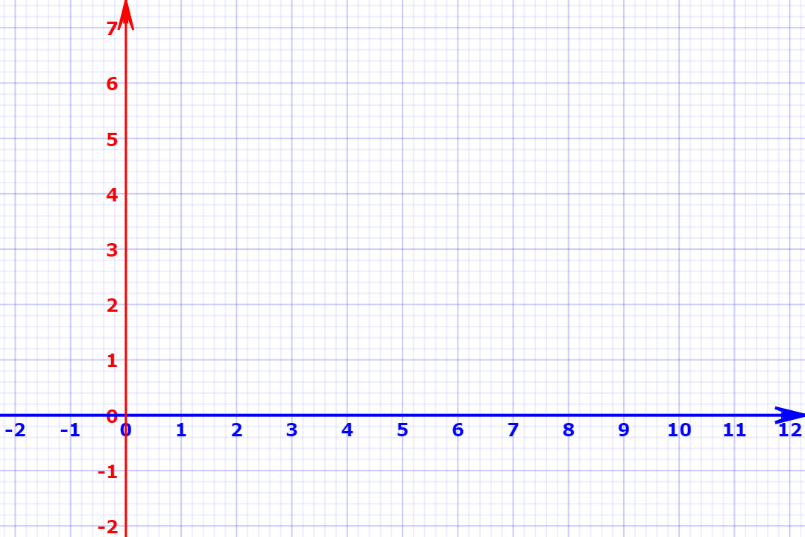
How did I get the formula?



Sol. Let (a,b) be the chef and (c,d) be the girl and

\* (c, d )

\* (a,b )

(0,x) be the mirror.

Line joining chef and mirror = L1

Line joining girl and mirror = L2

Slope of line L1 = m1 = =

(x, 0 )

Slope of line L2 = m2 = =

Angle between L1 and x-axis = α

Angle between L1 and x-axis = β

Now, L1 is incident ray and L2 is reflected ay, so by the law of reflection α = β.

Now, angle between lL1 and x-axis = tan α = = =

Now, angle between lL1 and x-axis = tan α = = =

Therefore, α = β tan α = tan β =

Solving these we get x = or