# 1-1.5-32

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**Question**:
Find the ratio in which the line segment joining the points $(1,-3)$ and $(4,5)$ is divided by $X$ axis.

**Solution**:

| points | values |
|---|---|
| **A** | $\begin{pmatrix}1\\-3\end{pmatrix}$ |
| **B** | $\begin{pmatrix}4\\5\end{pmatrix}$ |
| **C** | $\begin{pmatrix}x\\0\end{pmatrix}$ |

TABLE 1 0: values of the geometrical points in given question

If C divides AB in the ratio k : 1

$$C = \frac{kB + A}{k+1} \tag{0.1}$$

Substituting A ,B and C in the formula

$$\begin{pmatrix}\frac{4.k+1}{k+1}\\ \frac{k.5-3}{k+1}\end{pmatrix} = \begin{pmatrix}x\\0\end{pmatrix} \tag{0.2}$$

$$\frac{k.5-3}{k+1} = 0 \tag{0.3}$$

$$k = \frac{3}{5} = 3:5 \tag{0.4}$$

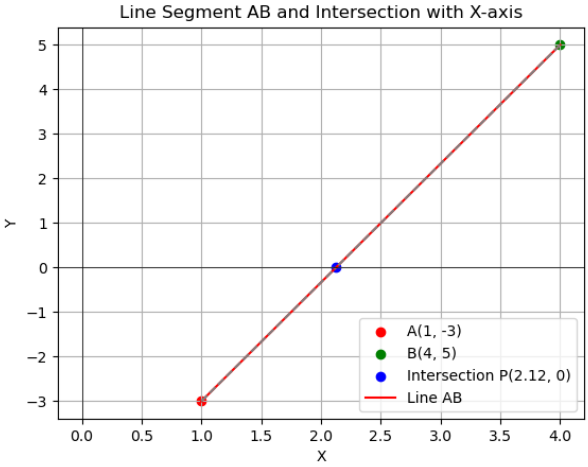


Fig. 0.1: plot for line