

# Assignment - 5

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**Abstract**—This is a simple document to learn about writing vectors, matrices and constructions (NCERT Syllabus) using latex, draw figures using Python, Latex.

Download all python and latex-tikz codes from

svn co <https://github.com/arjunjc93/Assignment-5>.  
git

## 1 LINEAR FORMS

G V V SHARMA

### EXERCISE 2.2

1.1. Find the value of  $k$  if  $\begin{pmatrix} 2 \\ 1 \end{pmatrix}$  is a solution of the equation

$$\begin{pmatrix} 2 & 3 \end{pmatrix} \mathbf{x} = k \quad (1.1.1)$$

**Solution:** We have:

$$\begin{pmatrix} 2 & 3 \end{pmatrix} \mathbf{x} = k \quad (1.1.2)$$

where,

$$\mathbf{x} = \begin{pmatrix} x \\ y \end{pmatrix} \quad (1.1.3)$$

Let

$$\mathbf{A} = \begin{pmatrix} 2 \\ 1 \end{pmatrix} \quad (1.1.4)$$

be the solution of (1.1.2)

Substituting  $\mathbf{A}$  in (1.1.2), we get,

$$(2 \times 2) + (3 \times 1) = k \quad (1.1.5)$$

$$\therefore k = 7 \quad (1.1.6)$$

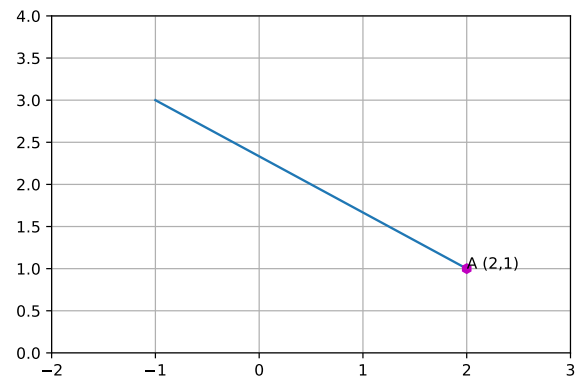


Fig. 1.1. Two lines representing given equations meet at point  $\begin{pmatrix} 2 & 3 \end{pmatrix}$