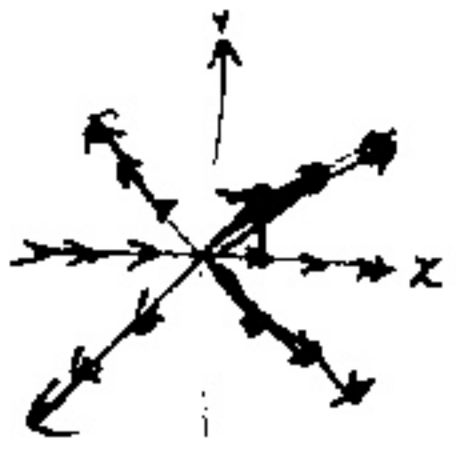
$\begin{bmatrix}\mathbb{W}\\0\end{bmatrix}$ $\begin{bmatrix}\geq 0\\0\end{bmatrix}$

1a $C_2V = C_2\begin{bmatrix}1\\0\end{bmatrix}$, where $C_2 \in \mathbb{W}$ 2a $C_2V = C_2\begin{bmatrix}1\\0\end{bmatrix}$, where $C_2 \geq 0$

1b $C_2V + dw = C_2\begin{bmatrix}1\\0\end{bmatrix} + d\begin{bmatrix}0\\1\end{bmatrix} = \begin{bmatrix}C_2\\d\end{bmatrix}$ 2b. $C_2V + dw = C_2\begin{bmatrix}1\\0\end{bmatrix} + d\begin{bmatrix}0\\1\end{bmatrix} = \begin{bmatrix}C_2\\d\end{bmatrix}$

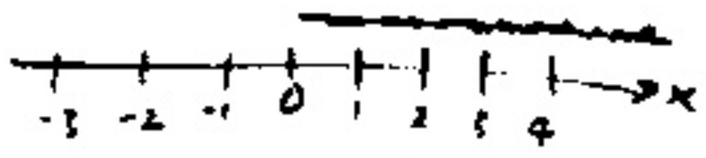
1a. Points across x-axis sampled at integer intervals (ie. −2, −1, 0, 1, 2)

1b. whole numbers only. sampling at discrete "whole no. intervals"

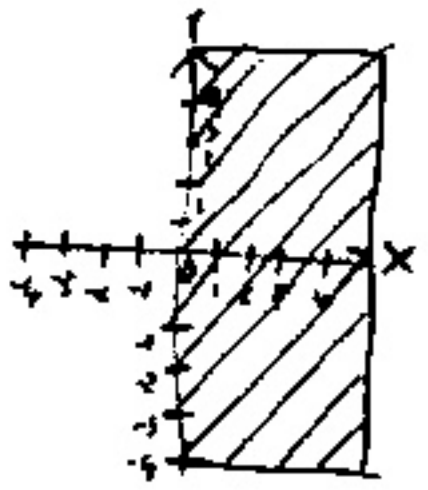


Line in case where C_2V lies on same plane as dw.
Plane in all other cases, sampled at integer intervals.

2a. Points(n) $_{n\to\infty}$ to the extent that a line forms across the positive half of the x-axis



2b. non-negative numbers only. plane that spans the entire half of the x-axis.



1.1c

$v = \begin{bmatrix}2\\-1\end{bmatrix}$ $w = \begin{bmatrix}-1\\2\end{bmatrix}$ $b = \begin{bmatrix}1\\0\end{bmatrix}$

$CV + dw = \begin{bmatrix}1\\0\end{bmatrix}$ $CV + dw$ $\frac{2}{3}\begin{bmatrix}2\\-1\end{bmatrix} + \frac{1}{3}\begin{bmatrix}-1\\2\end{bmatrix}$

$$\begin{bmatrix}2C+(-d)\\-C+2d\end{bmatrix} = \begin{bmatrix}1\\0\end{bmatrix}$$

$$\boxed{\begin{bmatrix}2C-d\\-C+2\end{bmatrix} = \begin{bmatrix}1\\0\end{bmatrix}}$$

$$\boxed{① \ \underline{2C-d=1} \quad ② \ -C+2d=0}$$

— they are actually asking us for this "equation" expression form.

I am not required to actually compute it!

$2(2d)-d=1$ $\underline{2d} = C$

$4d-d=2$ From ③. $C=2d$

$3d=1$ $C=2(\frac{1}{3})$

③ $d=\frac{1}{3}.$ $C=\frac{2}{3}$

Continuing to this, we can also decompose our vectors into a matrix form.

$$\begin{bmatrix}2 & -1\\-1 & +2\end{bmatrix}\begin{bmatrix}C\\d\end{bmatrix} = \begin{bmatrix}1\\0\end{bmatrix}$$

[redacted]