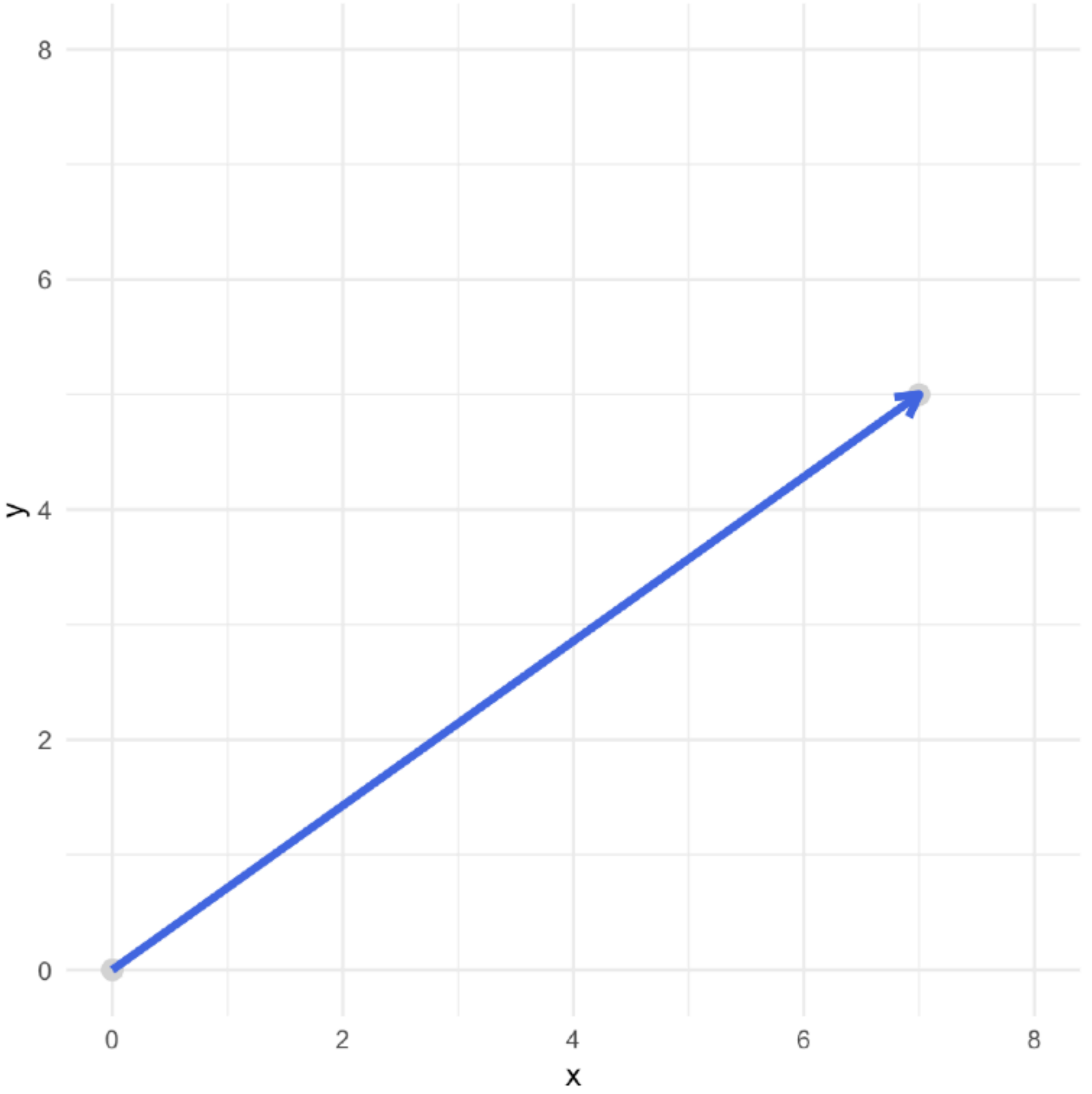
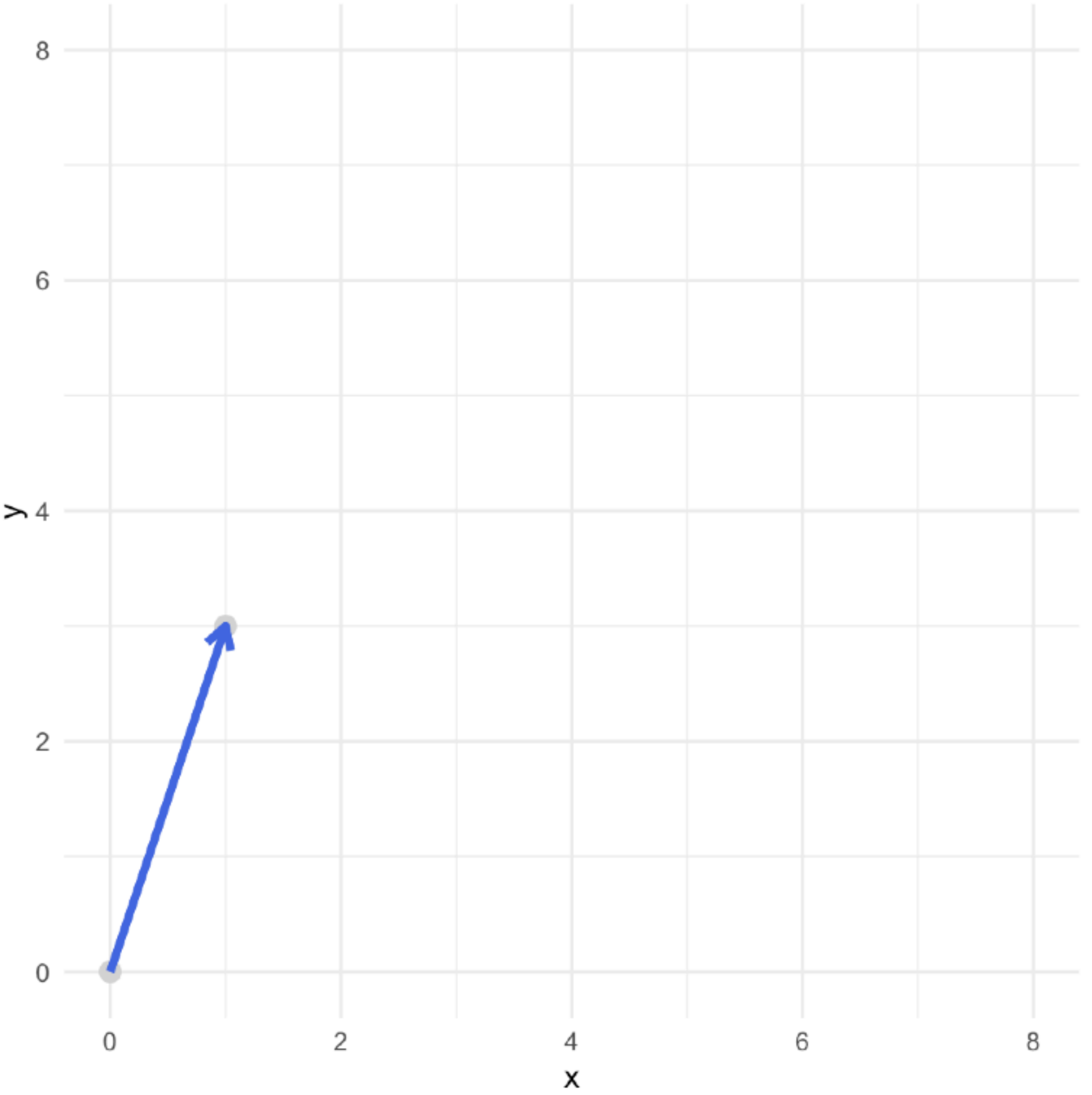

8
6
4
2
0
y
0
2
4
6
8
x


8
6
4
2
0
y
0
2
4
6
8
x

Eigendecomposition

What happens when a matrix hits a vector?

$$A == \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$$

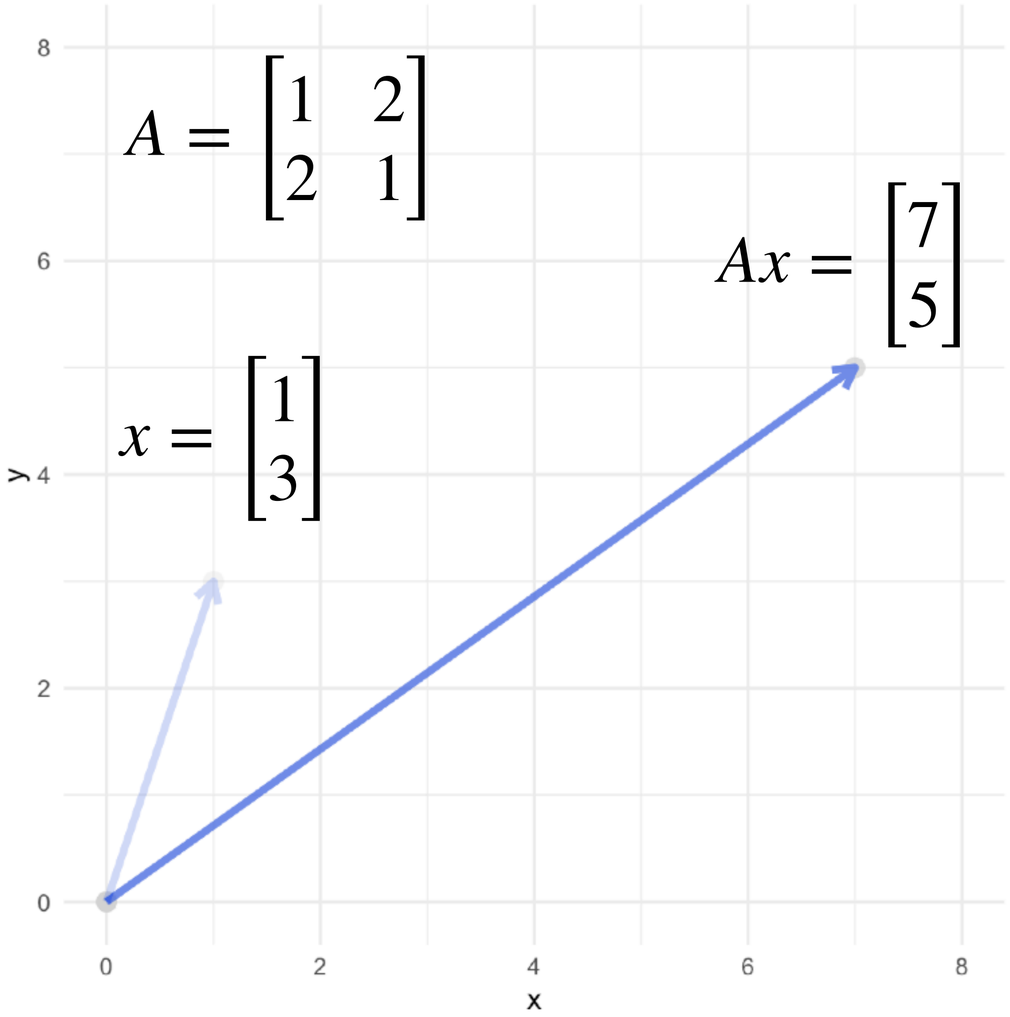
$$x = \begin{bmatrix} 1 \\ 3 \end{bmatrix}$$

The vector transforms into a new vector

- it strays from its path
- it may get scaled: stretched (longer) or squished (shorter)

$$Ax = \begin{bmatrix} 7 \\ 5 \end{bmatrix}$$

Eigendecomposition



What happens when a matrix hits a vector?

The vector transforms into a new vector

- it strays from its path
- it may get scaled: stretched (longer) or squished (shorter)

Eigendecomposition

For a given square matrix A, there are **special vectors** which refuse to stray from their path