

# Even More Examples in 2D

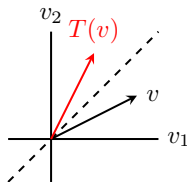
## Note:

Ex A:  $T(v) = 2v = \begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix} v$ . Ex B:  $T(v) = \begin{bmatrix} -v_2 \\ v_1 \end{bmatrix} = \begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix} v$ .

## Ex C:

$$T(v) = T\left(\begin{bmatrix} v_1 \\ v_2 \end{bmatrix}\right) = \begin{bmatrix} v_2 \\ v_1 \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix} v$$

A **reflection** through the line  $v_1 = v_2$



## Ex D:

$$T(v) = T\left(\begin{bmatrix} v_1 \\ v_2 \end{bmatrix}\right) = \begin{bmatrix} v_1 \\ 0 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix} v$$

A **projection onto** the  $v_1$  axis

