



### Definition

Suppose  $W$  is a subspace of a vector space  $V$ . The *codimension* of  $W$  in  $V$  is the difference of the dimension of  $V$  and the dimension of  $W$ . In this context,  $V$  is called the *ambient space* of  $W$ .

### Notation

As usual, let  $\dim W$  and  $\dim V$  denote the dimensions of  $W$  and  $V$ , respectively. We denote the codimension of  $W$  in  $V$  by  $\text{codim}(W)$ .



