



**Why**

Let us consider examples of signed measures.

**Examples**

Consider an integrable function defined on some measurable space. The extended-real-valued function which assigns to each distinguished set the value of the integrating the function over that set is a signed measure.

**Example 1.** Suppose  $(X, \mathcal{A}, \mu)$  a measure space and  $f : X \rightarrow \mathbf{R}$  is an integrable function. Define  $\nu : \mathcal{A} \rightarrow \mathbf{R}$  by

$$\nu(A) = \int_A f d\mu.$$

Then  $\nu$  is a signed measure.

