



## RATIONAL MULTIPLICATIVE INVERSES

### Why

What is the multiplicative inverse of  $[(a, b)]$  in the rationals?

### Result

**Proposition 1.** *The multiplicative inverse of  $[(a, b)] \in \mathbf{Q}$  if  $b \neq 0_{\mathbf{Z}}$  is  $[(b, a)]$ .*

### Notation

We denote the multiplicative inverse of  $q \in \mathbf{Q}$  by  $q^{-1}$ . We denote  $q \cdot (r^{-1})$  by  $q/r$ .

### Division

We call the operation  $(a, b) \mapsto a/b$  *rational division*.



