



## Why

1

## Definition

Let  $a, b \in \mathbf{Z}$ .  $a$  is a *divisor* of  $b$  if there exists  $k > 0$  so that  $ak = b$ .

If instead  $b = ak + r$  where  $r > 0$  and  $r < a$ , then we call  $r$  the *remainder* of dividing  $a$  into  $b$ .

## Notation

We denote the remainder of dividing  $a$  into  $b$  by  $b \bmod a$ .

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<sup>1</sup>Future editions will include.



