

$$a = qb \quad (r=0)$$

$$b \mid a$$

" b divides a "

" b is a divisor of a "

" b is a factor of a "

These are all the same thing!

You should be able to instantly recognize them and easily be able to transition from one def. to another

★ When we work with division in this section, everything is in \mathbb{Z} and we never actually use \mathbb{Q} (i.e. Just mentally remember that even if you're thinking $\frac{a}{b}$, don't think of it as a fraction — think to two separate integers a and b)

Exercise 3.1.6

$$1 \mid a \quad \text{since} \quad a = (a)(1)$$

$$-1 \mid a \quad \text{since} \quad a = (-a)(-1)$$

$$a \mid 0 \quad \text{since} \quad 0 = (0)(a)$$

Remember:

"1 divides anything"

"anything divides 0"