

**Theorem (1.6.15).** *Let  $x$  and  $y$  be real numbers. If  $x + y \geq 2$ , then  $(x \geq 1) \vee (y \geq 1)$ .*

*Proof.* By the contrapositive. Suppose it were the case that  $(x < 1) \wedge (y < 1)$ . We can simply add the inequalities:  $x + y < 1 + 1 = 2$ . This is the logical negation for the direct form hypothesis, by DeMorgans law. Thus concludes the proof. ■