Proposition 6.18. *Suppose for simplicity that $I = \mathbb{R}$. Putting together the previous ideas, we can write equivalently:* [20C]

- *if* $x_0 \in \mathbb{R}$,

$\exists \delta > 0, \forall x \neq x_0, \|x - x_0\| < \delta \Rightarrow P(x)$	$P(x)$ *definitely applies for* x *tending to* x_0
$\forall \delta > 0, \exists x \neq x_0, \|x - x_0\| < \delta \wedge P(x)$	$P(x)$ *frequently applies for* x *tending to* x_0

- *whereas in case* $x_0 = \infty$

$\exists y \in \mathbb{R}, \forall x, x > y \Rightarrow P(x)$	$P(x)$ *definitely applies for* x *tending to* ∞
$\forall y \in \mathbb{R}, \exists x, x > y \wedge P(x)$	$P(x)$ *frequently applies for* x *tending to* ∞

- *and similarly* $x_0 = -\infty$

$\exists y \in \mathbb{R}, \forall x, x < y \Rightarrow P(x)$	$P(x)$ *definitely applies for* x *tending to* $-\infty$
$\forall y \in \mathbb{R}, \exists x, x < y \wedge P(x)$	$P(x)$ *frequently applies for* x *tending to* $-\infty$

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