Work on these exercises **before** tutorial. Then you have the opportunity to work with your teaching assistant to master the exercise material, before writing a very brief quiz at the end of tutorial. Here are the tutorial rooms, according to the time you have signed up for in ROSI:

Tutorial section and time	TA, tutorials 1–5	TA, tutorials 5–9	Room	Surnames
L0101, Tuesday 9:10–10:30	Jason	Jason	BA3012	A–F
	Eleni	Eleni	BA3116	G–L
	Madina	Madina	BA2185	M–T
	Siamak	Siamak	BA2175	V–Z
L0201, Monday 7:10–8:30	Ekaterina	Ekaterina	BA2175	A–D
	Gal	Gal	BA1240	E–Li
	Yana	Adam	BA2185	Liang–S
	Christina	Nadira	BA3116	T–Z
L5101, Thursday 7:10–8:30	Christine	Christine	BA3116	A–F
	Elias	Elias	BA2135	G–Li
	Yiyan	Yiyan	BA1200	Lin–U
	Natalie	Natalie	GB244	V–Z

1. Write detailed proof *structures* for each of the following statements. **Don't write complete proofs** — for now, focus on the proof structure only and leave out *all* of the actual "content".

   (a) $\forall x \in \mathbb{Z}, \forall y \in \mathbb{Z}, x \leqslant y \Rightarrow \exists z \in \mathbb{Z}, x \leqslant z \leqslant y$

   (b) $\forall x \in \mathbb{Z}, (\exists y \in \mathbb{Z}, x = 3y + 1) \Rightarrow (\exists y \in \mathbb{Z}, x^2 = 3y + 1)$