§4.f Generalized induction, well ordering [27M]

Proposition 4.f.1 (Generalized induction)**.** *[1XR]*

Let us now present the principle of strong induction.

Proposition 4.f.2 (Strong Induction)**.** *[1XS]*

This principle is apparently stronger than the usual one; but we'll see that it is in fact equivalent.

Even this result can be generalized by requiring that $P(N)$ is true, and writing the inductive hypothesis in the form "$\forall k, N \leq k \leq n, P(k)$": you will get that $P(n)$ is true for $n \geq N$.

Note that the principle of well ordering is in some sense equivalent to the principle of induction; see [1XY].

Exercises

E4.f.3 [1XN]

E4.f.4 [1XP]

E4.f.5 [273]

E4.f.6 [1XT]

E4.f.7 [1XY]

Other exercises regarding "induction" are: [1XW]