

Model Checking, SS2011: Lecture 6

May 17, 2011

Remark 1. Let us denote (integer) linear arithmetic formulas by F and G .

Proposition 1. Assume y is not a free variable of G . The following holds.

$$(\forall x. (\exists y. F) \rightarrow G) \equiv \forall x. \forall y. F \rightarrow G$$

Proof.

$$\begin{aligned} (\forall. (\exists y. F) \rightarrow G) &\equiv \forall x. \neg(\exists y. F) \vee G \\ &\equiv \forall x. (\forall y. \neg F) \vee G \\ &\equiv \forall x. \forall y. \neg F \vee G \\ &\equiv \forall x. \forall y. F \rightarrow G \end{aligned}$$

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