

HOMEWORK 11
Due Monday, November 25

1. Read section 2.7 of van Dalen. With example 6 in mind, do problem 10 on page 91.
2. Verify that the following syllogisms are valid by giving deductions.
 - (a) All Greeks are mortal.
Some Greeks are women.
Therefore, some women are mortal.
 - (b) No Greeks are slaves.
Some slaves are women.
Therefore, some women are not Greek.
3. Prove $\neg\forall x\neg\varphi(x) \rightarrow \exists x\varphi(x)$.
4. On page 96, do problem 1(i); on page 99, do problems 4 and 5; and on page 103, do problems 3 and 4.
5. Suppose the formula ψ has no free x . Show that $\forall x\varphi(x) \rightarrow \psi \vdash \forall x(\varphi(x) \rightarrow \psi)$ is *not* provable.
- ★ 6. Do problem 7 on page 103.