

Problem Set 3

1. Book, 5.22 and 5.23 . [T-recog iff $A \leq_m A_{\text{TM}}$ and decidable iff $A \leq_m 0^*1^*$]
2. Book, 5.25 . [give an undecidable B , where $B \leq_m B$]
Is it possible that B is a T-recognizable language?
3. Book, 5.26 . [$A_{2\text{DFA}}$ and $E_{2\text{DFA}}$]
4. Book, 5.21 . [testing ambiguity is undecidable]
5. Book, 6.1 . [recursion theorem example]
6. Book, 6.11 . [give a model of ϕ_{It}]
- 7.* Book, 4.14 . [testing whether a CFG generates 1^* is decidable] Warning, it is hard.

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