Questions for EZQuiz 5

- State a theorem about eliminating productions from context-free grammars. Solution: Theorem 6.5, page 160.

- Section 6.1, exercise 8 (page 162).

- Section 6.2, exercise 5 (page 169).

- Define npda. Solution: definition 7.1, page 177.

- Let $M = (Q, \Sigma, \Gamma, \delta, q_0, z, F)$ be an npda. Define the language accepted by M, using mathematical notation. Solution: definition 7.2, page 180.

- Describe the relationship between context-free languages and npdas. Solution: every context free language is the language of some npda, and every language accepted by an npda is context-free. (This combines theorems 7.1 and 7.2.)

- State the common set operations under which context-free languages are closed. Solution: Theorem 8.3, page 214.

- State the common set operations under which context-free languages are not closed. Solution: Theorem 8.4, page 215.

- Example 8.7, page 217.

- State two decidable properties of context-free languages. Solution: (i) is the language empty? (ii) is the language infinite? (This combines theorems 8.6 and 8.7, page 218.)

- Define Turing machine. Solution: definition 9.1, page 223.

- Let $M = (Q, \Sigma, \Gamma, \delta, q_0, \Box, F)$ be a Turing machine. Define the language accepted by M, using mathematical notation. Solution: definition 9.3, page 229.

- Section 9.1, Exercise 7(a), page 236.