

Homework Three. Due September 18.

Exercise 0.1. Let

$$A = ((p \rightarrow q) \rightarrow (q \vee r)).$$

- (i) Write down a parse tree for A .
- (ii) Calculate the truth function \mathbf{t}_A .
- (iii) Exhibit a statement B in disjunctive normal form such that $A \leftrightarrow B$.

Exercise 0.2. Write down a parse tree for

$$\exists x \forall y (r(x, y) \wedge \sim \forall y s(f(x), g(x, y)))$$

Here $X = \{x, y\}$, $r, s \in R_2$, $f \in F_1$ and $g \in F_2$.

Exercise 0.3. Show the standard setup yields Mendelson's setup. You may use anything in Chapter 3 of the coursepack.

Exercise 0.4. Show the Mendelson's setup yields the standard setup. You may use anything in Chapter 1, Section 4 of Mendelson.