

Caderno de Exercícios LC1

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1 Aula 2

1.1 Exercício 1

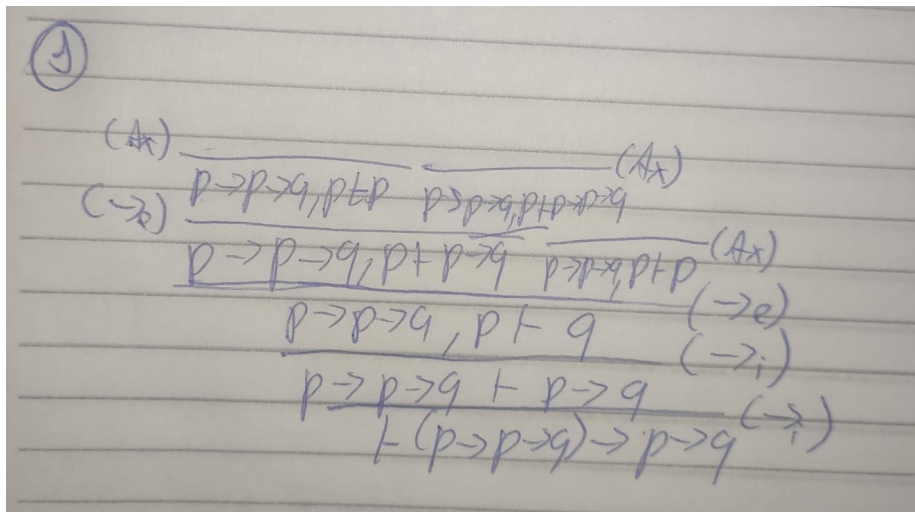


Figure 1: Exercício 1

1.2 Exercício 2

②

$$\begin{array}{c}
 \frac{p \rightarrow q, p \vdash p \rightarrow q}{p \rightarrow q \vdash p \rightarrow p \rightarrow q} (Ax) \\
 \frac{p \rightarrow q \vdash p \rightarrow p \rightarrow q}{\vdash (p \rightarrow q) \rightarrow (p \rightarrow p \rightarrow q)} (\rightarrow i)
 \end{array}$$

Figure 2: Exercício 2

1.3 Exercício 3

③

$$\begin{array}{c}
 (Ax) \quad \frac{q \rightarrow r \rightarrow t, p \rightarrow q, p \vdash p \rightarrow q}{q \rightarrow r \rightarrow t, p \rightarrow q, p \vdash q} (Ax) \\
 (Ax) \quad \frac{q \rightarrow r \rightarrow t, p \rightarrow q, p \vdash q}{q \rightarrow r \rightarrow t, p \rightarrow q, p \vdash r \rightarrow t} (\rightarrow e) \\
 \frac{q \rightarrow r \rightarrow t, p \rightarrow q, p \vdash r \rightarrow t}{q \rightarrow r \rightarrow t, p \rightarrow q \vdash p \rightarrow r \rightarrow t} (\rightarrow i) \\
 \frac{q \rightarrow r \rightarrow t, p \rightarrow q \vdash p \rightarrow r \rightarrow t}{q \rightarrow r \rightarrow t \vdash (p \rightarrow q) \rightarrow p \rightarrow r \rightarrow t} (\rightarrow i) \\
 \frac{q \rightarrow r \rightarrow t \vdash (p \rightarrow q) \rightarrow p \rightarrow r \rightarrow t}{\vdash (q \rightarrow r \rightarrow t) \rightarrow (p \rightarrow q) \rightarrow p \rightarrow r \rightarrow t} (\rightarrow i)
 \end{array}$$

Figure 3: Exercício 3

1.4 Exercício 4

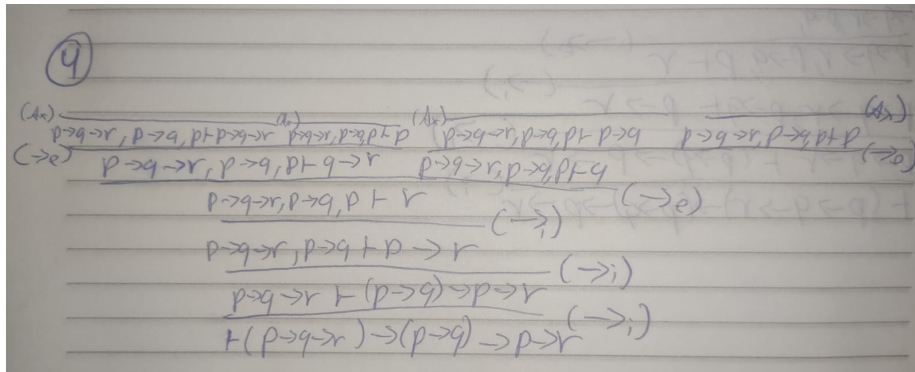


Figure 4: Exercício 4

1.5 Exercício 5

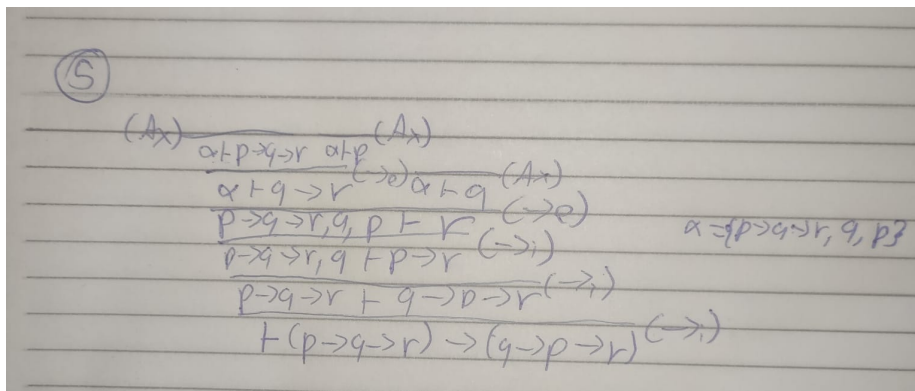


Figure 5: Exercício 5