Exercise set 10

$$\dfrac{\dfrac{\dfrac{\dfrac{\dfrac{\dfrac{[x = z]2 \quad [-x = y]3}{-z = y} \qquad \dfrac{[y = z]4}{z = y}}{\dfrac{\bot}{-y = z}\,\text{RAA4}}}{[-(-x = z \text{ or } -y = z)]1 \qquad -x = z \text{ or } -y = z}}{\dfrac{\bot}{-x = z}\,\text{RAA2}}}{[-(-x = z \text{ or } -y = z)]1 \qquad -x = z \text{ or } -y = z}}{\dfrac{\bot}{-x = z \text{ or } -y = z}\,\text{RAA1}}}{-x = y \dashrightarrow (-x = y \text{ or } -y = z)}\,\dashrightarrow\text{I } 3$$

$$\mathrm{A}xyz(-x = y \dashrightarrow (-x = z \text{ or } -y = z))$$

2.10.4

$$\dfrac{\dfrac{\mathrm{A}x(x = a \text{ v } x = b \text{ v } x = c) \qquad \dfrac{[\mathrm{P}(a) \,\&\, \mathrm{P}(b) \,\&\, \mathrm{P}(c)]}{\mathrm{P}(a)}[x = a] \qquad \dfrac{[\mathrm{P}(a) \,\&\, \mathrm{P}(b) \,\&\, \mathrm{P}(c)]}{\mathrm{P}(b)}[x = b] \qquad \dfrac{[\mathrm{P}(a) \,\&\, \mathrm{P}(b) \,\&\, \mathrm{P}(c)]}{\mathrm{P}(c)}[x = c]}{x = a \text{ v } x = b \text{ v } x = c \qquad \mathrm{P}(x) \qquad \mathrm{P}(x) \qquad \mathrm{P}(x)}}{\mathrm{P}(x)}$$

2.10.6

$$\dfrac{\dfrac{\dfrac{[\mathrm{A}x\ \mathrm{P}(x)]}{\mathrm{P}(a)} \quad \dfrac{[\mathrm{A}x\ \mathrm{P}(x)]}{\mathrm{P}(b)} \quad \dfrac{[\mathrm{A}x\ \mathrm{P}(x)]}{\mathrm{P}(c)}}{\mathrm{P}(a) \,\&\, \mathrm{p}(b) \,\&\, \mathrm{P}(c)}}{\mathrm{P}(x) \dashleftarrow\dashrightarrow (\mathrm{P}(a) \,\&\, \mathrm{P}(b) \,\&\, \mathrm{P}(c))}$$

$$\mathrm{A}x\ \mathrm{P}(x) \dashleftarrow\dashrightarrow (\mathrm{P}(a) \,\&\, \mathrm{p}(b) \,\&\, \mathrm{P}(c))$$