2 - 2 // $\{j+1 > i+1\}$ vc_1 $i > j \Rightarrow i+2 > i+1$

$j = i+1$

// $\{j+1 > j\}$

$i = j+1$

$\{i > j\}$

b)

$$\frac{\{I \wedge c\}\ S\ \{I\}}{\{I\}\ \text{while}(c)\ S\ \{I \wedge \neg c\}} \text{ while} \qquad \frac{P \Rightarrow I \quad \{I\}\ \text{while}(c)\ S\ \{I \wedge \neg c\} \quad I \wedge \neg c \Rightarrow Q}{\{P\}\ \text{while}(c)\ S\ \{Q\}} P \Rightarrow I$$

$$\text{while}_2 \quad \frac{P \Rightarrow I \quad \{I \wedge c\}\ S\ \{I\} \quad I \wedge \neg c \Rightarrow Q}{\{P\}\ \text{while}(c)\ S\ \{Q\}}$$

(necessário verificar todos)

2 - 2

Apresente uma prova que justifique

a) $\{i > j\}\ j := i+1;\ i := j+1\ \{i > j\}$

b) $\{i \neq j\}$ if $(i > j)$ then $m := i - j$ else $m := j - i$ $\{m > 0\}$

$i+2 > i+1 \Rightarrow$ sempre verdade

$$\text{Atrib}_2 \ \frac{i > j \Rightarrow i+1 > i+1}{\{i > j\}\ j := i+1\ \{j > j\}} \qquad \frac{}{\{j+1 > j\}\ i := j+1\ \{i > j\}}\ \text{Atrib}$$

$$\text{seq} \ \frac{\{i > j\}\ j := i+1\ \{j > j\} \quad \{j+1 > j\}\ i := j+1\ \{i > j\}}{\{i > j\}\ j := i+1;\ i := j+1\ \{i > j\}}$$

b) ...

$$\text{if} \ \frac{\{i \neq j \wedge (i > j)\}\ m := i - j}{\{i \neq j\}\ \text{if}(i > j)\ \text{then}\ m := i-j\ \text{else}\ m := j-i\ \{m > 0\}}$$