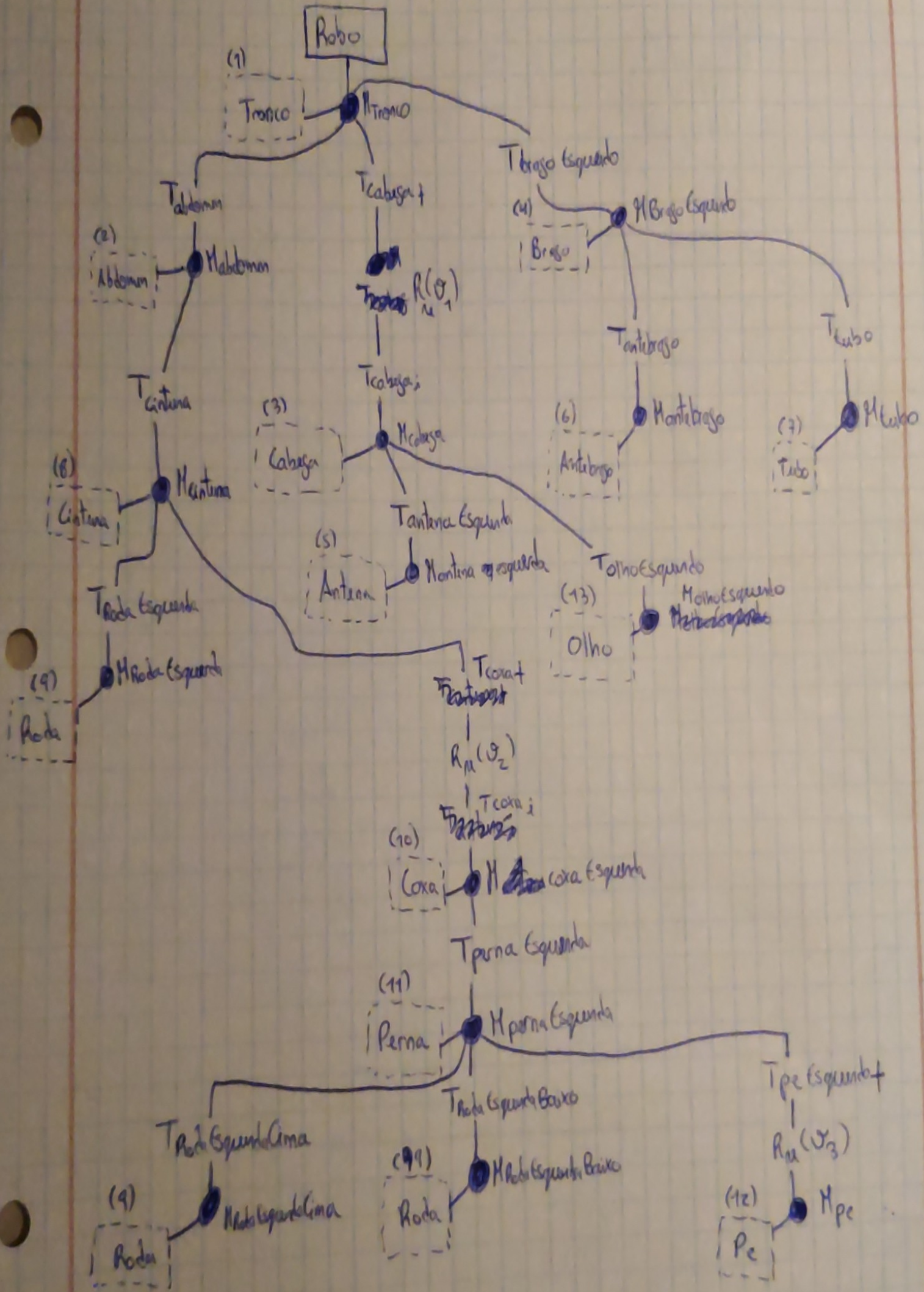

Robo
(1)
Tronco
MTronco
Tabdomen
Tcabeça
Tbraço Esquerdo
(2)
Abdomen
Mabdomen
(4)
Braço
MBraço Esquerdo
R(θ1)
Tcabeça
Tantebraço
Tcubo
Tcintura
Tcabeça
(3)
Cabeça
Mcabeça
(6)
Antebraço
Mantebraço
(7)
Tubo
MCubo
(8)
Cintura
Mcintura
Tantena Esquerda
(5)
Antena
Mantena esquerda
TolhoEsquerdo
(13)
Olho
MolhoEsquerdo
TRoda Esquerda
Tcoxa
(9)
Roda
MRoda Esquerda
R(θ2)
Tcoxa
(10)
Coxa
Mcoxa Esquerda
Tperna Esquerda
(11)
Perna
Mperna Esquerda
TRoda Esquerda Baixo
TRoda Esquerda Cima
Tpe Esquerdo
R(θ3)
(9)
Roda
MRoda Esquerda Cima
(9)
Roda
MRoda Esquerda Baixo
(12)
Pe
Mpe

Graus de Liberdade:

Pés:

- $-180^\circ \leq \vartheta_1 \leq 0^\circ$

Cintura:

$$0^\circ \leq \vartheta_2 \leq 90^\circ$$

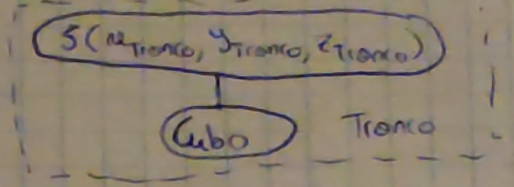
Cabeça:

$$0 \leq \vartheta_3 \leq 180^\circ$$

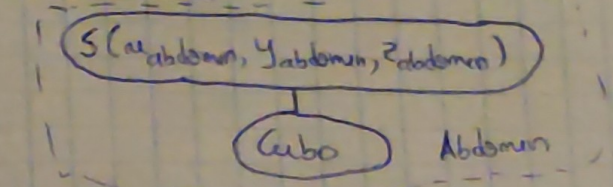
Membros Superiores:

$$0 \leq \delta_1 \leq \text{Braço}$$

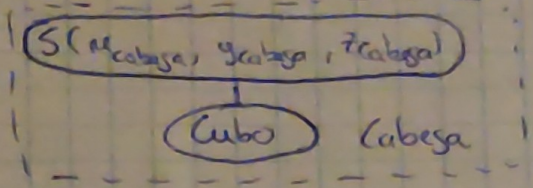
Tronco(1):



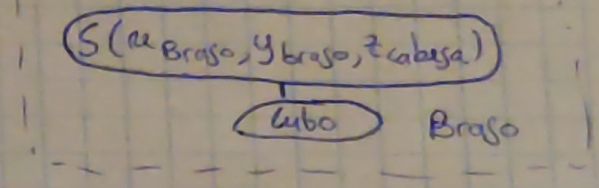
Abdomen(2):



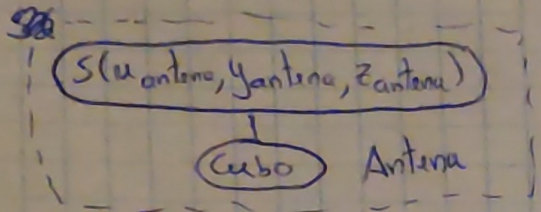
Cabeça(3):



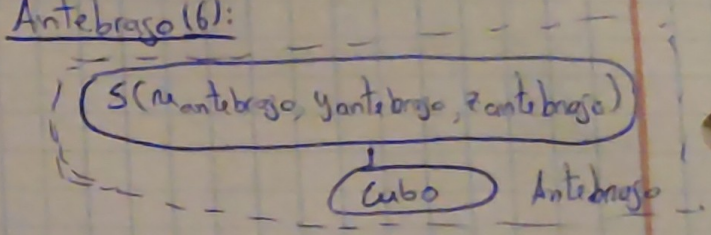
Braço(4):



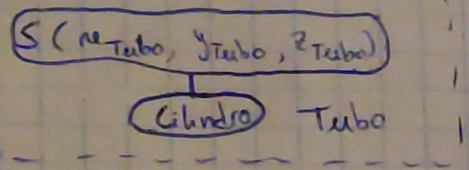
Antena(5):



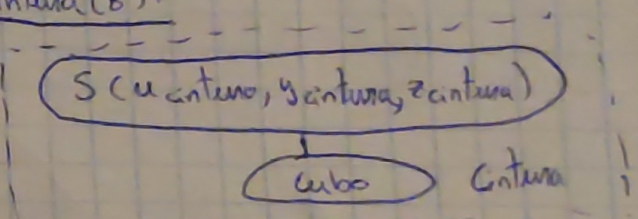
Antebraço(6):

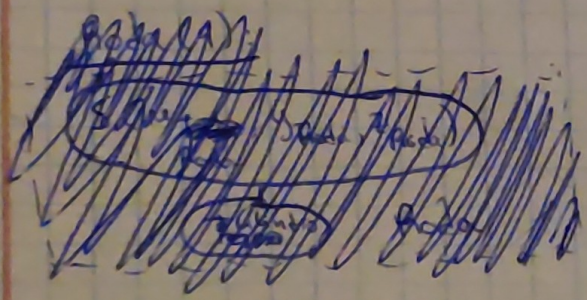


Tubo(7):

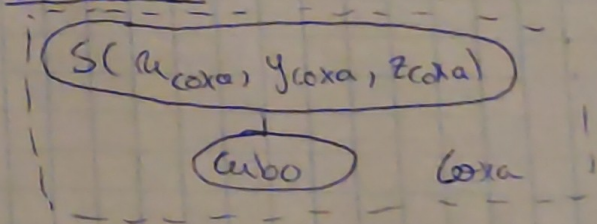


Cintura(8):

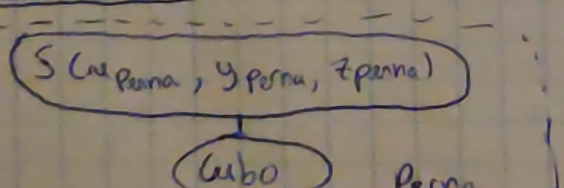




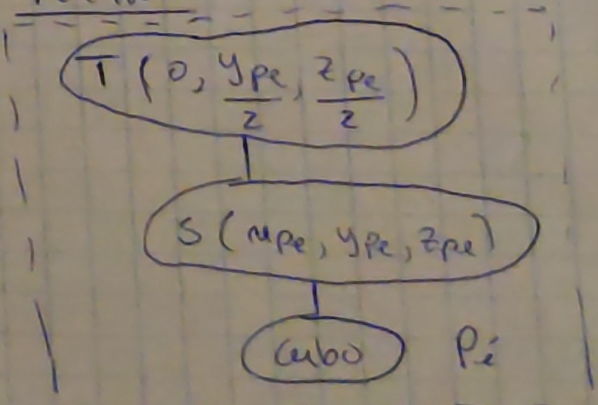
Coxa(10):



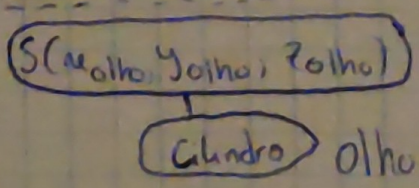
Perna(11):



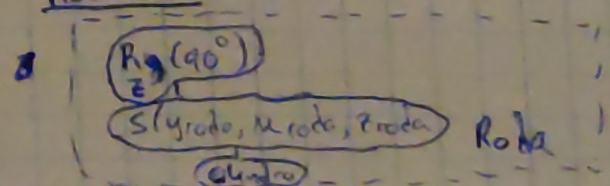
Pé(12):



Olho(13):



Roda(9):



Translações:

$T_{abdomen} = T\left(0, -\frac{(y_{tronco} + y_{abdomen})}{2}, 0\right)$ $\quad T_{cabeça+} = T\left(0, \frac{y_{Tronco}}{2}, -\frac{z_{Tronco}}{2}\right)$

$T_{cabeça-} = T\left(0, \frac{y_{cabeça}}{2}, \frac{z_{cabeça}}{2}\right)$ $\quad T_{Braçoesquerdo} = T\left(-\frac{(x_{Tronco} + x_{Braço})}{2} + \delta_1, 0, -\frac{(z_{Tronco} + z_{Braço})}{2}\right)$

$T_{antebraço} = T\left(0, -\frac{(y_{braço} + y_{antebraço})}{2}, \frac{z_{braço} + z_{antebraço}}{2}\right)$ $\quad T_{cintura} = T\left(0, -\frac{(y_{abdomen} + y_{cintura})}{2}, 0\right)$

$T_{Tubo} = T\left(-\frac{(x_{braço} + x_{Tubo})}{2}, \frac{y_{braço}}{2}, \frac{z_{tubo} - z_{braço}}{2}\right)$

$T_{antena\ esquerda} = T\left(-\frac{(x_{cabeça} + x_{antena})}{2}, \frac{y_{antena}}{2}, \frac{z_{antena} - z_{cabeça}}{2}\right)$

$T_{Roda\ esquerda} = T\left(-\frac{(x_{cintura} + x_{roda})}{2}, \frac{y_{cintura} - y_{roda}}{2}, \frac{z_{roda} - z_{cintura}}{2}\right)$

$T_{coxa+} = T\left(\frac{x_{coxa} - x_{abdomen}}{2}, 0, \frac{z_{coxa} - z_{cintura}}{2}\right)$

$T_{coxa-} = T\left(0, -\frac{(y_{cintura} + y_{coxa})}{2}, -\frac{z_{coxa}}{2}\right)$ $\quad T_{Perna\ esquerda} = T\left(0, -\frac{(y_{coxa} + y_{perna})}{2}, \frac{z_{perna} - z_{coxa}}{2}\right)$

$T_{Roda\ Esquerda\ Cima} = T\left(-\frac{(x_{Roda} + x_{perna})}{2}, \frac{y_{roda} - y_{perna} + d_{Roda}}{2}, \frac{z_{roda} - z_{perna}}{2}\right)$

$T_{Roda\ Esquerda\ Baixo} = T\left(-\frac{(x_{Roda} + x_{perna})}{2}, \frac{y_{roda} - y_{perna}}{2}, \frac{z_{roda} - z_{perna}}{2}\right)$

$T_{Pé\ esquerdo+} = \left(0, -\frac{y_{pé}}{2}, \frac{z_{perna}}{2}\right)$

$T_{olho\ esquerdo} = T\left(-\frac{x_{cabeça}}{4}, \frac{y_{cabeça}}{4}, \frac{z_{cabeça}}{2}\right)$