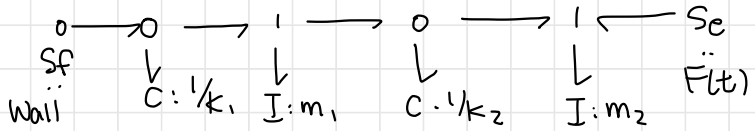
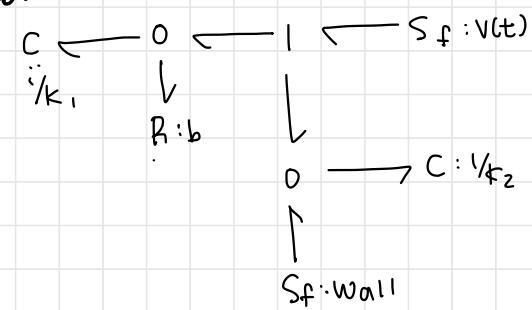
시스템동역학 HW1

2016310249 한채정

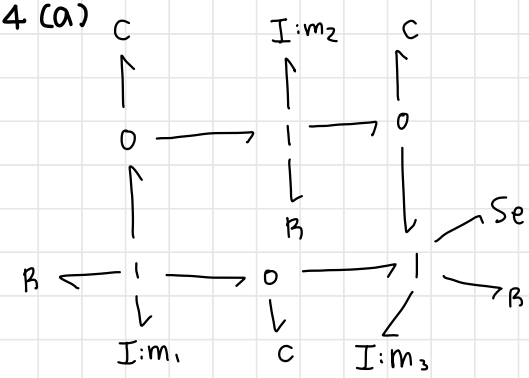
2(a)



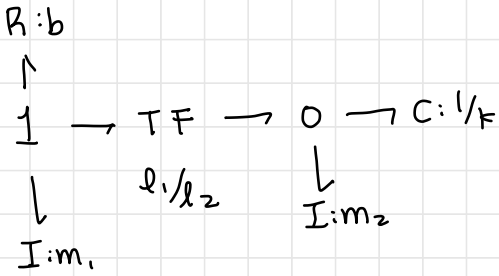
2(b)



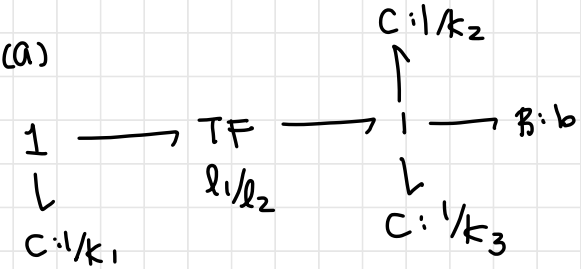
4 (a)


C
I:m2
C
0
1
0
R
Se
R
1
0
1
R
I:m1
C
I:m3

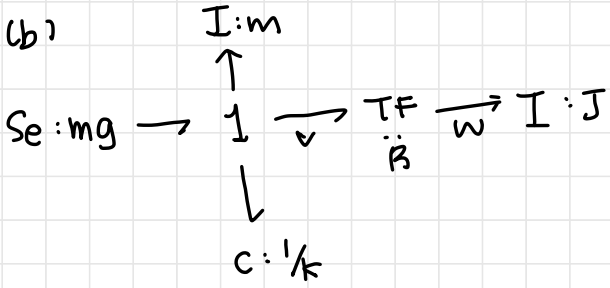
(b)


R:b
1
TF
0
C:1/F
l1/l2
I:m2
I:m1

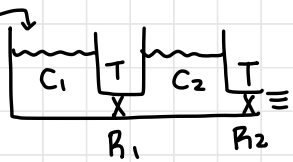
5 (a)


C:1/k2
1
TF
1
R:b
l1/l2
C:1/k1
C:1/k3

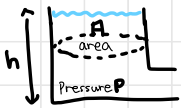
(b)


I:m
Se:mg
1
v
TF
:
R
w
I:J
C:1/k

6 (a)



1) Capacitance $q = \Phi_C(e)$



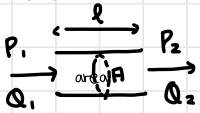
V (volume) $= Ah$

$V = CP = C\rho gh \quad \therefore$

$C = \frac{A}{\rho g}$

P (pressure) $\rightarrow C \rightarrow \dot{V}$ (volume)

2) Inertia $P = \Phi_I(f)$



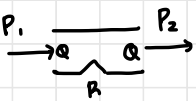
$A(P_1 - P_2) = \rho A l \frac{\dot{Q}}{A}$

$P_1 - P_2 = \rho l \frac{\dot{Q}}{A}$

$P_{(\text{pressure momentum})} = \frac{\rho l}{A} Q$

$\therefore I = \frac{\rho l}{A}$ ans)

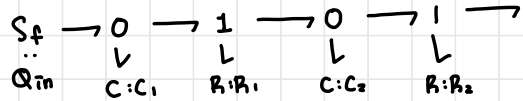
3) Resistance $e = \Phi_R(f)$



$f = P_1 - P_2$

$f = R \cdot Q$

$e : f \rightarrow R : R$



(b)

ans)