"Turbo"
"HW3 P3"
"Zhaoyi Jiang(.1364)"

"From Chart"
psi=1.3
phi=0.6
epsilon=80
eta_tt=0.91

"Angles"
R=0.5
alpha_1=alpha_3
alpha_2=**arctan**((1-R+psi/2)/phi)
alpha_3=**arctan**((1-R-psi/2)/phi)
beta_1=beta_3
beta_2=**arctan**(-(R-psi/2)/phi)
beta_3=**arctan**(-(R+psi/2)/phi)

"Work"
u=300[m/s]
psi=W/u^2***convert**(km,m)

"Velocity"
phi=cz/u
c1=c3
w1=w3
c2=cz/**cos**(alpha_2)
w2=((c2***sin**(alpha_2)-u)^2+cz^2)^.5
c3=cz/**cos**(alpha_3)
w3=((c3***sin**(alpha_3)-u)^2+cz^2)^.5

SOLUTION
Unit Settings: SI K bar kJ mass deg

α_1 = -14.04 [degree]	α_2 = 62.45 [degree]	α_3 = -14.04 [degree]
β_1 = -62.45 [degree]	β_2 = 14.04 [degree]	β_3 = -62.45 [degree]
c1 = 185.5 [m/s]	c2 = 389.1 [m/s]	c3 = 185.5 [m/s]
cz = 180 [m/s]	ε = 80	η_{tt} = 0.91
ϕ = 0.6	ψ = 1.3	R = 0.5
u = 300 [m/s]	W = 117 [kj/kg]	w1 = 389.1 [m/s]
w2 = 185.5 [m/s]	w3 = 389.1 [m/s]	

No unit problems were detected.