"Turbo"
"Zhaoyi Jiang (.1364)"
"HW4"
"P3"

va=12[m/s]
r=20[m]
lambda=4
cp=0.3
rho= 1.225[kg/m^3]

W_dot=0.5*rho*(pi*r^2)*va^3
lambda=w*r/va
omega=w/2/pi
"cp=4*a*(1-a)^2"
a=0.091
vd=(1-a)*va
vb=(1-2*a)*va
pa=1[bar]
pa***convert**(bar,pa)/rho+0.5*va^2=p1*convert(bar,pa)/rho+0.5*vd^2

SOLUTION
Unit Settings: SI C bar kJ mass deg

a = 0.091	cp = 0.3
λ = 4	ω = 0.382 [rpm]
p1 = 1 [bar]	pa = 1 [bar]
r = 20 [m]	ρ = 1.225 [kg/m^3]
va = 12 [m/s]	vb = 9.816 [m/s]
vd = 10.91 [m/s]	w = 2.4 [rad/s]
$\dot{W}$ = 1.330E+06 [W]	

1 potential unit problem was detected.