ME3160

Assignment 3

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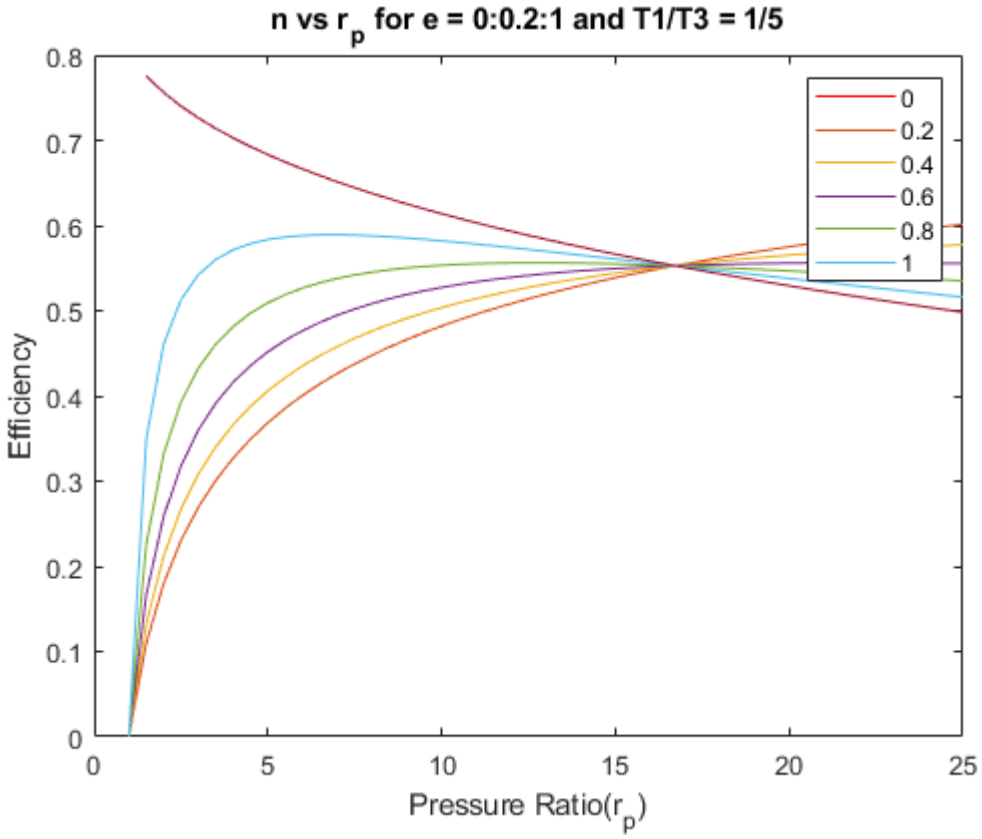
ME21BTECH11001

```
% ME21BTECH11001 Abhishek Ghosh

clc

clear all

rp = 1:0.5:25;
k = 1.4;
n = (k-1)/k;
e = [0, 0.2, 0.4, 0.6, 0.8, 1];
n_noreg = 1 - 1./rp.^(n);
plot(rp, n_noreg, 'r');

ratio1 = 1/5; %T1/T3

for i=1:1:6
  n_reg = ((1 - 1./rp.^n) + ratio1.*(1 - rp.^n))./((1 - e(i)./(rp.^n)) -
ratio1.*(rp.^n - e(i).*(rp.^n)));
  hold on
  plot(rp, n_reg);
end


title("n vs r_p for e = 0:0.2:1 and T1/T3 = 1/5")
xlabel("Pressure Ratio(r_p)");
ylabel("Efficiency");
legend("0", "0.2","0.4","0.6","0.8","1");
```



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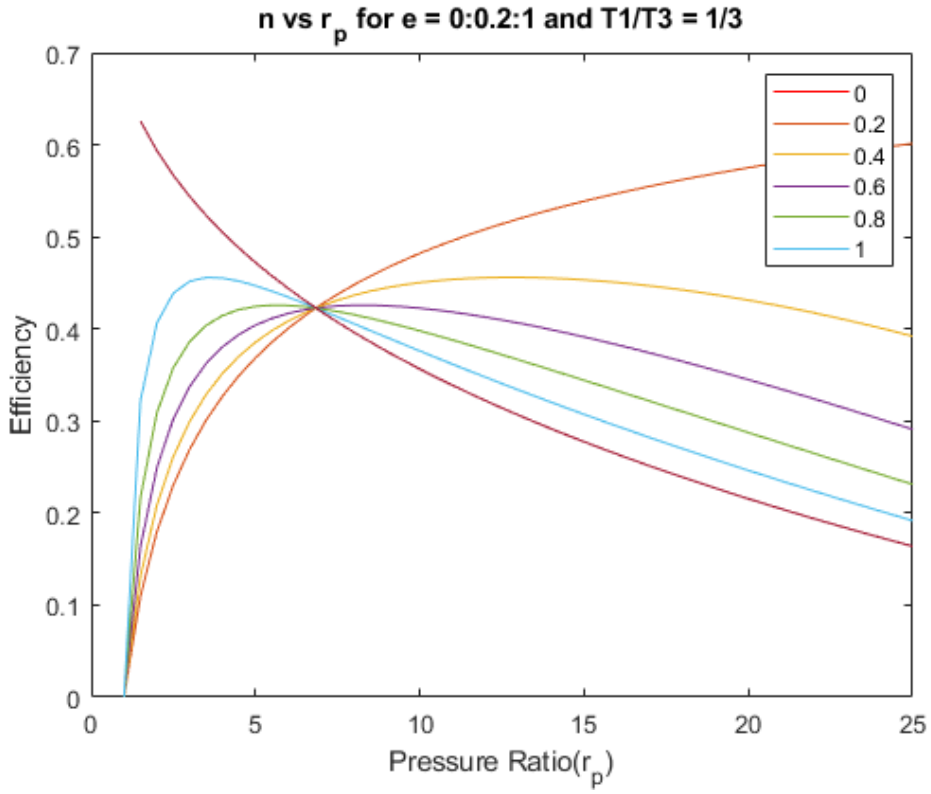
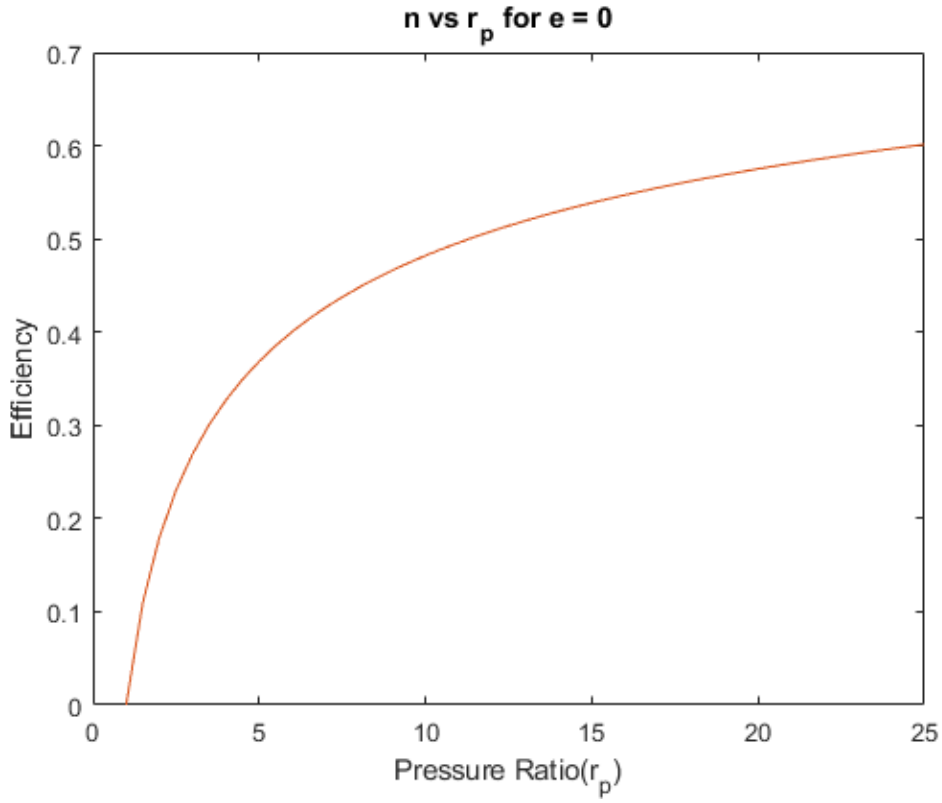

n vs r_p for e = 0:0.2:1 and T1/T3 = 1/3
Efficiency
Pressure Ratio(r_p)
0
0.2
0.4
0.6
0.8
1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
5
10
15
20
25


n vs r_p for e = 0
Efficiency
Pressure Ratio(r_p)
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
5
10
15
20
25