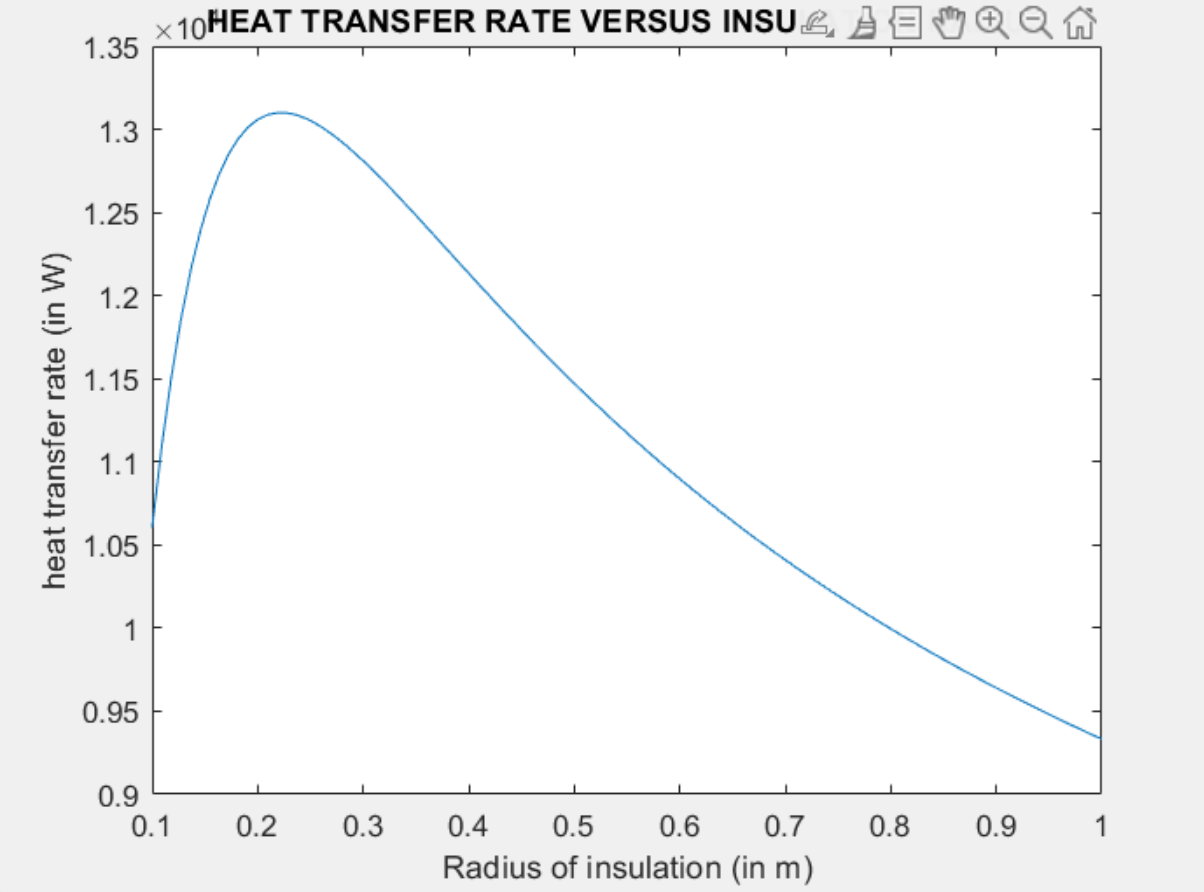
```
r1=0.1;
r2=1;
r=linspace(r1,r2,100);
k=10;
h=45;
L=5;
T1=373;
T_inf=298;
dT=T1-T_inf;
R=@(r) (log(r/r1)/(2*pi*k*L))+(1/(h*2*pi*r*L));
% (log(r/r1)/(2*pi*k*L)) = conductive resistance
% (1/(h*2*pi*r*L))= convective resistance
Q=@(x) dT/(R(x));
heat_transfer=zeros(100,1);
for i=1:100
heat_transfer(i)= Q(r(i));
end
plot(r,heat_transfer)
xlabel('Radius of insulation (in m)');
ylabel('heat transfer rate (in W)');
title("HEAT TRANSFER RATE VERSUS INSULATION RADIUS")
```


HEAT TRANSFER RATE VERSUS INSU
×10
1.35
1.3
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
heat transfer rate (in W)
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Radius of insulation (in m)