problem9.m

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% Zeeshan Ahmad, EET-3132 Remote Sensing, Spring 2016
% Problem 9, Chapter 2, RS from Air and Space,
% From the formula for blackbody radiation, consider the element:
% x 5 / e x ? 1. For what value of x does this function have a maximum?
% From that, can you ob- tain Wien?s Law? This turns out to be a difficult
% problem if you use calculus. A more straightforward approach is to plot
% the function of x using a calculator or computer.
x=0:0.1:100;
y=x.^5./(exp(x)-1);
y_max=max(y)
c_index=find(y==y_max);
x_max=x(c_index);
plot(x,y)
axis([0 20 0 25]);
text(x(c_index),y(c_index),'\leftarrow MaxRadiance '); %(' x_max ','y_max ')');
xlabel('x');
ylabel('f(x)');
```

Command Window

```
y_max =

   21.1989

>>
```