

# **8 Tips for Success in** **Quantitative Assignments**

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*MEEN1110: MEE Practice I*

***#1 Show All Your Work***

***#2 State All Assumptions***

(In MEEN 1110, I give full credit for answers based on incorrect assumptions)

***#3 Read & Answer Entire Question***

(many gave numerical results, but did not suggest mechanisms)

***#4 Attend Office Hours (I am lonely)***

## ***#5 Consider Whether Your Solution Makes Physical Sense***

Can a box less than a foot long on either side really have a surface area of 610.5 square meters?

Can the same box, sitting under ambient conditions really absorb 15,500 watts of heat?

## **#6 Learn the Ancient Secrets of Unit Cancellation**

$$\frac{3}{2} k_b T = \frac{1}{2} m v_{ave}^2$$

$$[k_b] = \frac{J}{K} \quad [T] = K \quad [v_{ave}] = \frac{m}{s}$$

**What are the resulting units of  $m$ ?**

## ***#7 Handling Exponents on Units***

***How to convert 15 in<sup>2</sup> to m<sup>2</sup>***

***1 inch = 0.0254 meters***

$$15\text{in}^2 \cdot \left(\frac{0.0254\text{m}}{1\text{in}}\right)^2 = 15\text{in}^2 \cdot \left(\frac{0.00064516\text{m}^2}{1\text{in}^2}\right) = 0.0097\text{m}^2$$

***#8 Select Collaborators Who  
Consistently Score 9's and 10's***