MATH 115-018 QUIZ 1

1. **Grading Policy**: How do the things in the *section component* of your grade affect your final grade in the course?

   Solution: The section component of your grade can raise (or lower) your final grade in the course by 1/3 of a letter grade (that is, from a "B" to a "B+", etc.).

2. **Gateway**: How does the gateway test affect your grade if you don't pass it?

   Solution: If you do not pass the gateway test, your final grade is lowered by a full letter grade (e.g., from a "C" to a "D").

3. Suppose the amount of homework (in tons) as a function of time t spent in college is linear, and that at $t = 1$ (one semester in) the amount is 1.2 tons and at $t = 5$ it is 1.8 tons. Find the linear formula the amount of homework, h as a function of time t.

   Solution: Because the function is linear, we know that $h = mt + b$. Plugging in $t = 1$ and $t = 5$, we get

   $$m + b = 1.2$$
   $$5m + b = 1.8.$$

   From the first of these we have that $b = 1.2 - m$, so, plugging into the second, $4m + 1.2 = 1.8$. Thus $4m = 0.6 = \frac{3}{5}$, and $m = \frac{3}{20}$.
   Then, going back to the first equation, $\frac{3}{20} + b = 1.2$. $1.2 = \frac{6}{5} = \frac{24}{20}$, so $b = \frac{21}{20}$. Thus

   $$h = \frac{3}{20} t + \frac{21}{20}.$$

4. What are the *slope* and *vertical intercept* of the function you found in (3)?

   Solution: The slope is $m = \frac{3}{20}$ and the vertical intercept is $b = \frac{21}{20}$.