

**GEOL 202 Math Module: Homework version B**

1. List four words that you most closely associate with math.

2. Given the statement,

I can run faster when it's hot out,

use the variables  $x$  (distance you've run),  $t$  (time), and  $T$  (temperature) to write an equation that says the same thing. Explain your reasoning. [Hint: speed is a derivative.]

3. The Willamette footbridge near campus has multiple supports fixed to the river bed. Assume each one can withstand 1,000,000 Newtons of force from the river before it collapses. The force of the river flowing past is proportional to its depth, described by the function,

$$\frac{df}{dh} = 10,000 \text{ (Newtons/meter)}$$

How deep can the water get before the bridge collapses? Do we ever need to worry about this scenario?