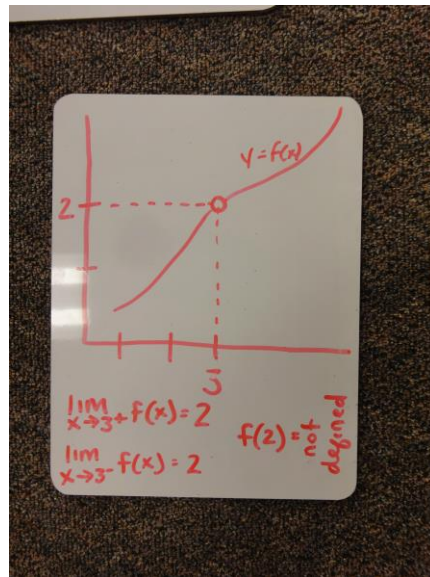
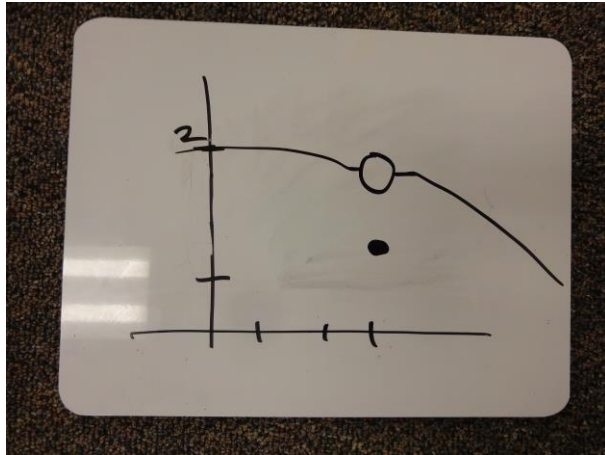


Continuity Problem:



A variety of different things (including nothing at all) could be happening at  $x = 3$ . This implies the function is not necessarily continuous at  $x = 3$ .

Intermediate Value Theorem problem (done for you in class).

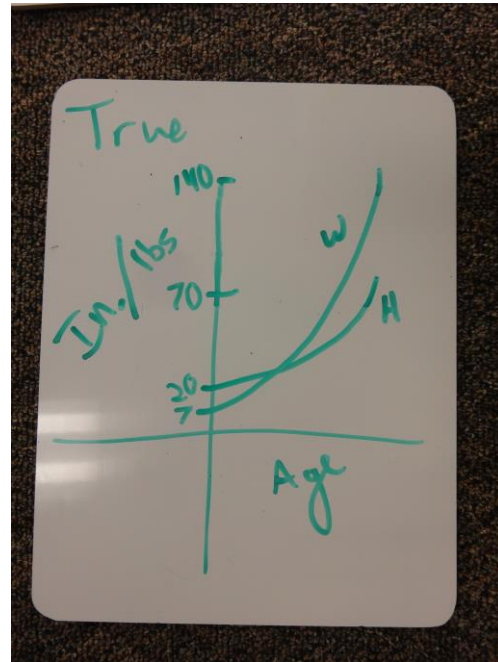
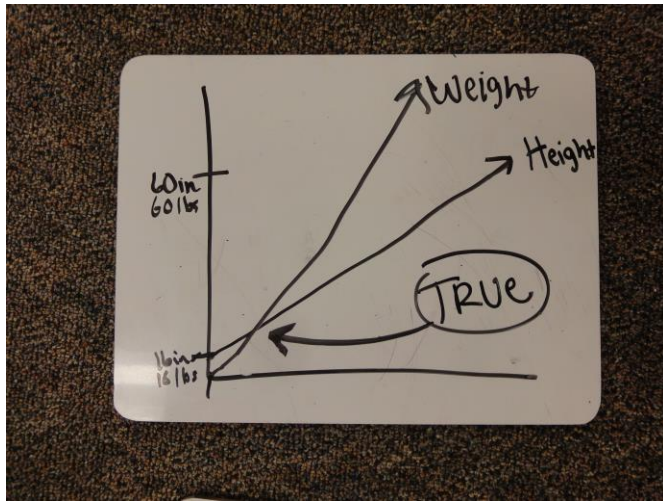
Problem 1/3 (height):

True, because at one point we were shorter than 3 feet & now we are taller than 3 feet so we must have been exactly 3 feet at one point.

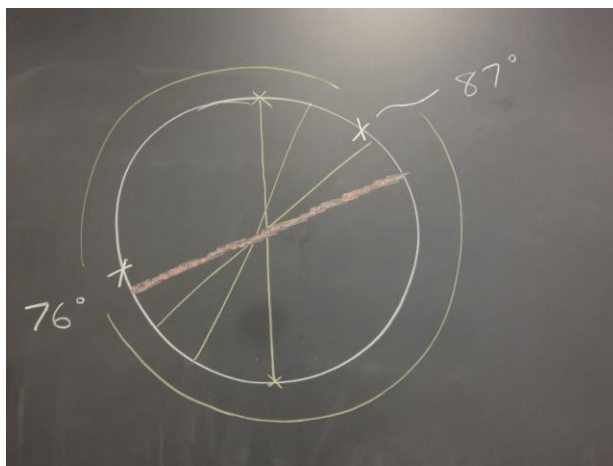
TRUE  
You cant by pass  
3ft

From the above descriptions, we see height is a continuous function of time.

Problem 2/3 (height vs. weight). You can definitely debate this one... How precise are our measuring devices? Isn't everything in real life technically discrete? Regardless (for most individuals), we can expect that at some point, our weight in pounds = our height in inches (within reason). The example I gave in class is this was the case for my daughter right around 50 lbs and 50 inches. The crossing of the graphs demonstrates this:



Problem 3/3: Temperature at the equator



This statement is also true (again, depends on how picky you want to be). Like the other problems, it is very difficult to tell *where this occurs* (in the IVT, this is the "c" value) but we are guaranteed its existence.