Functions Worksheet 2

1. If the function $f(n)$ represents the number of man hours required to construct n pizzas at dinner time at the local delivery joint, what domain makes sense?

2. Find the domain of the function $g(x) = \frac{1}{\sqrt{x-2}}$.

3. If a tree grows a inches each year, and the total height of the tree is $f(n)$, where n is the number of years, write an equation for $f(n)$.

4. A tree has two periods of linear growth. First, it grows from $H = 0$ to H_{min} at a_1 inches per year. Then it grows slower, at a rate of a_2 inches per year until it reaches H_{max}, after which it levels off. What domains make sense for each rate?

5. Find the domain of the function $f(x) = \frac{5x}{10x^2-3x-1}$.

6. If your bank account balance decreases by r_d for each day of vacation time and $b(d) = b_0 - r_d d$, where b_0 is the initial balance, identify the domain of days d that allows you to come home to a positive balance.

7. You can hike $f(n)$ miles after building up n days of stamina. Identify the domain that makes sense.

8. Your cell phone plan charges you \$0.20 for each text message you send. Your parents put a cap of \$50 on your texting bill every month. If $c(t) = 0.2t$ is the cost of the total number of texts you send per month t, what is the domain of the function?

9. As part of a weight loss plan, your average Calories consumed per day, denoted as c, is measured to calculate how much weight you'll lose. If you're losing weight consistently, what is the domain of the function?

10. Aliens land on Planet Earth and estimate a total of 7 billion people in the world. They can choose to help humans overpopulate the world or destroy everyone on the planet. What is the domain of people p can they add or remove from the world?
