Homework: Algebra II

1. The post office issues stamps whose cost C is dependent upon the weight W of your package according to the following chart. The cost of the first ounce is \$0.49 and each additional ounce costs \$0.21.

Weight (oz)	Cost of Stamp (\$)
$0 \leq W < 1$	0.49
$1 \leq W < 2$	0.70
$2 \leq W < 3$	0.91
$\vdots$	$\vdots$

   (a) (5 points) Plot the graph of C as a function of W for $0 \leq W \leq 8$.

   (b) (5 points) * Write C as a function of W using the floor function $\lfloor W \rfloor$.

2. A cell phone service offers the following deal. With a flat rate of \$50/month you can use up to 2 gigabytes of data. If you go over that amount, you must pay an additional \$10 per gigabyte that you use. Let C be the monthly bill (in \$) for a cell phone and let D be the data usage (in gigabytes).

   (a) (5 points) Plot the graph of C as a function of D for $0 \leq D \leq 5$.

   (b) (5 points) Write C as a function of D using the case notation.

3. A bucket which can hold a maximum of 5 liters of water is being filled with a hose at a rate of 0.25 liters per second. Let V denote the volume of water (in liters) in the bucket after time t (in seconds) starting from when the hose is turned on.

   (a) (5 points) Plot the graph of V as a function of t for $0 \leq t \leq 50$.

   (b) (5 points) Write V as a function of t using the case notation.