Math 32, Spring 2010, Section 101
Worksheet 4

Work through the following problems in groups of about four. Take turns writing; everyone should get a chance to write for some of the problems. It's more important to understand the problems than to do all of them.

1. Solve the inequality, and write the answer using interval notation.

   (a) $1 - 2(t+3) - t \leq 1 - 2t$

   (b) $-3 \leq 2x + 1 \leq 5$

   (c) $|3x + 5| > 17$

   (d) $x^2 - 2x \leq 3$

   (e) $\frac{x^2-8x-9}{x} < 0$

   (f) $\frac{x+1}{x+2} > \frac{x-3}{x+4}$

2. Given a person x, let $f(x)$ be x's sister's age. Is f a function? Why or why not?

3. Give an example of a function whose domain is UC Berkeley students. What can you say about the range?

4. Determine the domain of each of the following functions

   (a) $f(t) = \sqrt{\frac{2-t}{t+4}}$

   (b) $h(x) = \frac{x+1}{\sqrt{x+6}-x}$

5. Find the domain and range of the function $k(x) = \frac{2x-7}{3x+24}$.

6. Write an inequality whose solutions are the values of k such that $x^2 - 2kx + 4$ has 2 real solutions. You don't have to solve it.