Due in class on Monday Feb 27, 2012.

**Problem 1.** Compute the square root of your birth date using the algorithm covered in class, up to 3 decimal places. For example, if your birthday is on the 17\textsuperscript{th} of January, compute the square root of 17. If your birthdate is a perfect square (1, 4, 9, 16, 25) then add one to it before computing the square root (so if your birthday is the 9th, then compute the square root of 10th). Show all your work!

**Problem 2.** If you use the estimation method covered in class, what answer do you get for the previous question?

**Problem 3.** Run the shortest path algorithm on the following graph. Show all the steps, as well as all the d values of all nodes. Please start at root r.

![Graph Image]

**Problem 4.** Write a query string to search in Google for Washington Post articles about college basketball but not baseball, between 2009 and 2011. Refer to the link posted on the class web page for effective web search.

**Problem 5.** Write a Ruby program to print the squares of the first 25 integers. Please run the program, and provide both the listing of the code as well as the output.