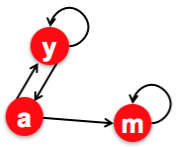
Quiz 13 Stream & Links
Name: _____ ID: _____

1) (2pts) Give a random teleport $\beta = 0.8$ for calculating the PageRank, what is v^1 for the graph below assuming v^0 is the initial state with equal probability to land on each node?



2) (3pts) Using the approach in the slides, you need to use more than two map tasks to compute matrix multiplication on the matrix and vector below with MapReduce. You need to show the matrix and vector elements processed in each map task and write the multiplication steps in each map and reduce task.

$$\begin{bmatrix} 1 & 2 & 3 & 4 \\ -1 & 2 & 0 & 5 \\ 0 & 4 & -2 & 6 \\ 2 & 4 & 0 & 6 \end{bmatrix}$$ multiplies $[1, 3, 2, 1]^T$

3) (3pts) Show how you can derive the memory requirement for DGIM. You need to show how you derive the memory requirement for storing the timestamp and the count for each bucket and then show the overall memory requirement.

4) (2pts) Show that DGIM is never off by more than 50%