Math 1553 Quiz 2: Section 1.2 (10 points, 10 minutes)

1. (1 point each) In each case, determine whether the given augmented matrix is in reduced row echelon form. Circle YES if it is in RREF; circle NO if it is not in RREF.

a) $\left(\begin{array}{ccc|c} 1 & 3 & 0 & 2 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 \end{array}\right)$ YES   NO

b) $\left(\begin{array}{ccc|c} 0 & 0 & 0 & 1 \end{array}\right)$ YES   NO

2. (1 point each) Fill in the blank. For each matrix, consider the corresponding system of linear equations and write how many free variables there are for the solution set. If there are no free variables, write 0 as your answer.

(a) $\left(\begin{array}{cc|c} 1 & 0 & -1 \\ 0 & 1 & 2 \\ 0 & 0 & 0 \end{array}\right)$

There are ⎯⎯⎯⎯⎯⎯⎯⎯⎯ free variables.

(b) $\left(\begin{array}{cccc|c} 1 & 2 & 0 & 8 & 1 \\ 0 & 0 & 1 & 0 & 1 \end{array}\right)$

There are ⎯⎯⎯⎯⎯⎯⎯⎯⎯ free variables.

(please turn over to the next page!)

3. (6 points) Find all values of h (if there are any) that make the following system *consistent*.

$$2x - y = 3$$
$$4x + hy = h.$$

Show your work! If you write the correct answer without sufficient work, you will receive little or no credit.