Name:

Quiz 2: §3.3, 4.1

Complete the following problems to the best of your ability. **SHOW ALL OF YOUR WORK.** Unshown work will not be graded. You may use a calculator.

1. You own a burger stand, and at the end of the day are selling surplus burgers at a discount. You have 13 buns, 19 beef patties, and 15 cheese slices. A plain burger requires 1 patty and 1 bun. A cheeseburger requires 1 patty, 1 bun and 1 slice of cheese, and a double cheeseburger requires 2 patties, 1 bun and 2 slices of cheese. How many of each kind of burger should you make?

2. Define the following matrices:

$$A = \begin{bmatrix} 1 & -2 & 0 \\ 4 & 6 & -3 \end{bmatrix} \quad B = \begin{bmatrix} 3 & 5 \\ -1 & 10 \\ -6 & -4 \end{bmatrix} \quad C = \begin{bmatrix} -2 & 1 & 0 \\ 3 & -6 & 1 \end{bmatrix}$$

Calculate the following new matrices:

(a) $3A + B^T$

(b) $3(A^T + C^T)$

(c) $(C^T - A^T)^T$

(d) $4A - 6B$