Name:	
Start Time:	
End Time:	
Date:	

Math 260 Quiz 4 (45 min)

1. (1 point) If $A = \begin{bmatrix} 1 & 7 \\ 3 & -6 \\ 0 & 2 \end{bmatrix}$, find A^T

2. (2 points) If
$$A = \begin{bmatrix} 7 & -2 \\ 1 & 4 \\ 2 & 3 \end{bmatrix}$$
 and $B = \begin{bmatrix} 0 & 3 & 2 \\ 1 & -1 & 2 \end{bmatrix}$, find AB .

3. (4 points) When writing the system of equations

equations

$$2x_1 + 3x_2 + 4x_3 = 10$$

$$5x_1 + x_2 - 2x_3 = 1$$

$$x_1 - 2x_2 = 1$$

$$-2x_1 + 7x_3 = 12$$

as the matrix equation $A\vec{x} = \vec{b}$, find...

a) A b)
$$\vec{x}$$
 (don't solve for \vec{x} here) c) \vec{b}

d) Row reduce an augmented matrix to solve for \vec{x} (calculator OK)

4. (3 points) Prove: If A and B are $m \times n$ matrices, then $(A + B)^T = A^T + B^T$.

Extra Credit

1. (2 points) Prove: If \vec{x}_1 and \vec{x}_2 are solutions to $A\vec{x} = \vec{0}$, and a and b are scalars, then $a\vec{x}_1 + b\vec{x}_2$ is also a solution $A\vec{x} = \vec{0}$.

2. (2 points) Prove or disprove: If A and B are 2×2 matrices, then AB = BA.