Name: ———————————————————————————— ———————— / 10

There are 10 points possible on this quiz. No aids (book, calculator, etc.) are permitted. **This is a short-answer quiz.**

Questions below concern matrices A, B, C and D below.

$$A = \begin{pmatrix} 1 & -1 \\ 2 & 3 \end{pmatrix} \quad B = \begin{pmatrix} 1 & 0 \\ 1 & 2 \\ 0 & -4 \end{pmatrix} \quad C = \begin{pmatrix} 2 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & 2 & 3 \end{pmatrix} , D = \begin{pmatrix} 0 & 1 \\ 2 & 0 \end{pmatrix}$$

1. (1 point) Find $A + 3D$

2. (2 points) Find the product BA.

3. (2 points) Find a 3×3 matrix M such that the resulting product MC corresponds to the row operation: $r_3 - 2r_1 \mapsto r_3$.

$$A = \begin{pmatrix} 1 & -1 \\ 2 & 3 \end{pmatrix} \quad B = \begin{pmatrix} 1 & 0 \\ 1 & 2 \\ 0 & -4 \end{pmatrix} \quad C = \begin{pmatrix} 2 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & 2 & 3 \end{pmatrix}, D = \begin{pmatrix} 0 & 1 \\ 2 & 0 \end{pmatrix}$$

4. (4 points) Find C^{-1}.

5. (1 point) Change one entry in A such that the resulting matrix has no inverse.