

This quiz is worth 10 points.

Name: \_\_\_\_\_

1. (4 points) Let  $A = \begin{bmatrix} 1 & 2 & 0 & -1 \\ 6 & 12 & 3 & -12 \\ 2 & 4 & -1 & 0 \\ -1 & -2 & 1 & -1 \end{bmatrix}$

(a) Find the null space of  $A$ . (Hint  $\text{rref}(A) = \begin{bmatrix} 1 & 2 & 0 & -1 \\ 0 & 0 & 1 & -2 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}$ .)

(b) Find one particular **nonzero** vector in the null space of  $A$ .

2. (6 points) For each matrix below, find its determinant.

$$(a) B = \begin{bmatrix} 2 & 3 & 0 \\ 1 & 1 & -2 \\ -3 & 5 & 2 \end{bmatrix}$$

$$(b) C = \begin{bmatrix} 0 & 0 & 5 & -3 \\ 4 & 1 & -1 & 4 \\ 0 & 10 & 8 & 2 \\ 0 & 0 & 0 & 2 \end{bmatrix} \text{ (Hint: This should be quick.)}$$