Practice worksheet | Matrices and transformations

Singular matrices

Name: _____ Date: _____

6 questions | 12 marks

1. Is $\begin{pmatrix} 2 & 6 \\ 1 & 3 \end{pmatrix}$ singular? [2 marks]

2. Find k so that $\begin{pmatrix} 2 & k \\ 4 & 6 \end{pmatrix}$ is singular. [2 marks]

3. Solve $x + y = 4$, $2x + 2y = 8$ using a parameter. [2 marks]

4. Explain why $x + y = 4$, $2x + 2y = 9$ is inconsistent. [2 marks]

5. Find a non-zero vector sent to zero by $\begin{pmatrix} 1 & -2 \\ 2 & -4 \end{pmatrix}$. [2 marks]

6. The matrix $\begin{pmatrix} 3 & 0 \\ 0 & 0 \end{pmatrix}$ acts on the plane. Describe all its possible outputs. [2 marks]