MATH 3191 Written Homework 9
____/20 points

Name: _____

Due: March 23$^{\text{rd}}$

Show all work that leads to your answers. I will be providing feedback on the work as well as the answers!

1. Let $A, B \in \mathbb{R}^{2\times 2}$ be defined as below and use theme to answer both of the following A is similar to B

$$A = \begin{bmatrix} 1 & 2 \\ 3 & k \end{bmatrix}, B = \begin{bmatrix} 4 & 0 \\ 0 & -1 \end{bmatrix}$$

(a) (10 points) Determine a value for k such that A is similar to B.

(b) (10 points) Compute a matrix C such that $AC = CB$ and C is invertible.