Pre-quiz review problem set

March 17, 2022

This problem set will help you prepare for the quiz on **Monday, March 21st** I won't be collecting it, but I encourage you to complete it and then check the **answer key** on Google Classroom. Do work in your notebook!

1. For (a-c) Use matrices A and B below:

   $A =$
   $$\begin{bmatrix} 3 & 7 & 1 \\ -8 & 1 & 0 \\ 4 & 5 & 1 \end{bmatrix}$$

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

   Be sure to show all work!

   (a) $2B$

   (b) $A + B$

   (c) $2(A \times B) - B$

2. Answer the questions below in a complete sentence each:

   (a) What has to be true about two matrices X and Y in order for you to be able to add or subtract them?

   (b) What has to be true about two matrices X and Y in order for you to be able to multiply $X \times Y$?

3. Solve the system of linear equations below.

   $$\begin{cases} 7x + 3y = 2 \\ 9x + 4y = 0 \end{cases}$$

   Be sure to:

   i. Convert to $AX = B$

   ii. Find A^{-1}

   iii. Solve for variables using $X = A^{-1}B$

   iv. show all work!