Math 152 **Name:** _____
Spring 2021 **Homework 1 - Due Wednesday, February 3**

1. Study the material from Sections 1.1 and 1.2. (including the examples) and the corresponding lecture notes and videos. Only after doing this, attempt the following exercises.

2. Solve the following exercises (unless otherwise noted, please complete all parts of each problem):

   - Section 1.1 (page 9): # 1a, 2 c d, 7, 9, 14,
   - Section 1.2 (page 17): # 1 (explain why), 3a, 4a, 5a, and
   - For the following augmented matrix,

$$\begin{bmatrix} 1 & 2 & -1 & a \\ 2 & 3 & -2 & b \\ -1 & -1 & 1 & c \end{bmatrix}$$

     answer the following questions:

     a) For which values of a, b, and c is the linear system consistent?
     b) When it is consistent, does the system have one or infinitely many solutions?
     c) For which values of a, b, and c is the linear system inconsistent?
     d) What is the rank of the constant matrix in this system? Why?

Start by copying the exercise from the text, followed by a neatly and clearly written (or typed) solution containing enough details so that if a student in our class reads your solution, they can make sense of it without additional explanations (see HW rubric on Canvas). Be sure to use complete sentences in your responses.