1. A scientist has six objects, three of type X and three of type Y, and wants to determine the weight of each type. The scientist decided to perform two weighings: 1 point

1. She weighs three X objects and one Y object and gets a total weight of 1100 grams.
2. She weighs one X object and three Y objects and gets a total weight of 1050 grams.

Which of the following linear systems describes the experiment above?

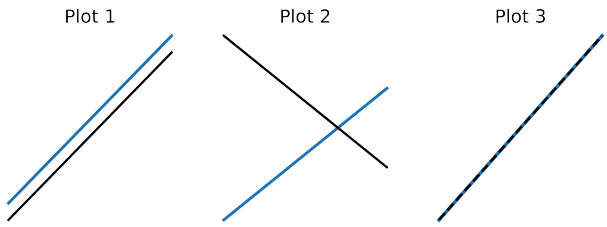
- (●) $\begin{cases} 3x + y = 1100 \\ x + 3y = 1050 \end{cases}$
- ( ) $\begin{cases} 3x + 3y = 1100 \\ 3x + 3y = 1050 \end{cases}$
- ( ) $\begin{cases} 3x + y = 1050 \\ x + 3y = 1100 \end{cases}$
- ( ) $\begin{cases} 3x = 1100 \\ 3y = 1050 \end{cases}$

2. Which of the following matrices can be used to determine the singularity of the system of equations below? 1 point

$$\begin{cases} 2x + 3y = 15 \\ 2x + 4y = 16 \end{cases}$$

- (●) $\begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix}$
- ( ) $\begin{bmatrix} 3 & 15 \\ 4 & 16 \end{bmatrix}$
- ( ) $\begin{bmatrix} 2 & 15 \\ 2 & 16 \end{bmatrix}$
- ( ) $\begin{bmatrix} 2 & 2 \\ 3 & 4 \end{bmatrix}$

3. Consider the next three plots below. 1 point



Now, consider the next three system of equations below.

System 1

$$\begin{cases} 3x - 2y = 1 \\ x + y = 3 \end{cases}$$

System 2

$$\begin{cases} 3x + 3y = 2 \\ 9x + 9y = 6 \end{cases}$$

System 3

$$\begin{cases} x + 3y = 4 \\ x + 3y = 3 \end{cases}$$

Each plot represents one of the systems described. Choose the correct option.

- ( )
  - Plot 1 represents System 3
  - Plot 2 represents System 2
  - Plot 3 represents System 1
- (●)
  - Plot 1 represents System 3
  - Plot 2 represents System 1
  - Plot 3 represents System 2
- ( )
  - Plot 1 represents System 1
  - Plot 2 represents System 3
  - Plot 3 represents System 2
- ( )
  - Plot 1 represents System 1
  - Plot 2 represents System 2
  - Plot 3 represents System 3
- ( )
  - Plot 1 represents System 2
  - Plot 2 represents System 1