### Activity Sheet 1 - Graphing Systems of Equations and their Solution

1. **Explore** the Slope-Intercept screen for 5 minutes. Write down 1 - 3 things you discover or remember about working with this SIM.
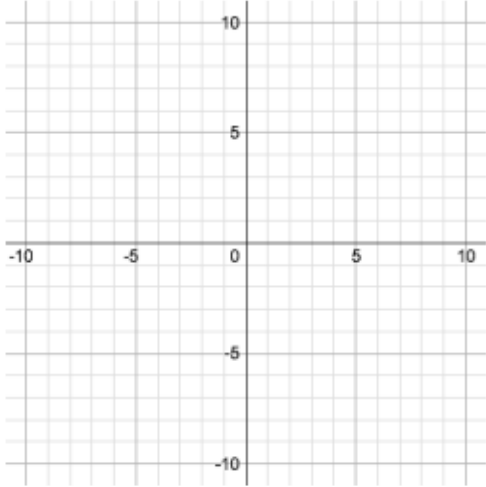
Follow link: Slope-Intercept

2. **Create** a line with positive slope. Use the Save Line button to keep it. **Create** a second line on the same coordinate plane with positive slope that intersects the first line. (Be sure to change the location of both purple and blue points.) Use the Save Line button to keep it.

**Sketch** both lines on the coordinate plane below.
**Identify** 3 points on each line. List common point below.
Then **complete** the table.

| Graph | Line 1: | Line 2: |
|---|---|---|
|  | y = ___x + _____ <br><br> Points on line: <br><br> ( ____ , ____ ) <br><br> ( ____ , ____ ) <br><br> ( ____ , ____ ) | y = ___x + ___ <br><br> Points on line: <br><br> ( _____,_____) <br><br> (_____,_____) <br><br> (_____,_____) |

Point in common (estimate if necessary)   ( ____ , ____ )

**Discuss** with your partner:
Do you think the two lines will ever cross again? **Explain** your reasoning.

KEEP CALM AND TURN AND TALK

Clear the Previous two lines.

3. **Erase** previous lines using the . **Create** a line with negative slope. Use the [Save Line] button to keep it. **Create** a second line on the same coordinate plane with negative slope the intersects the first line. Use the [Save Line] button to keep it.

**Sketch** both lines on the coordinate plane below.
**Identify** 3 points on each line. List common point below.
Then **complete** the table.

| | Line 1: | Line 2: |
|---|---|---|
|  | y = ___x + _____ | y = ___x + ____ |
| | Points on line: | Points on line: |
| | ( _____ , _____ ) | ( _____ , _____ ) |
| | ( _____ , _____ ) | ( _____ , _____ ) |
| | ( _____ , _____ ) | ( _____ , _____ ) |

Point in common (estimate if necessary)   ( _____ , _____ )

**Discuss** with your partner:
Do you think the two lines will ever cross again? **Explain** your reasoning.
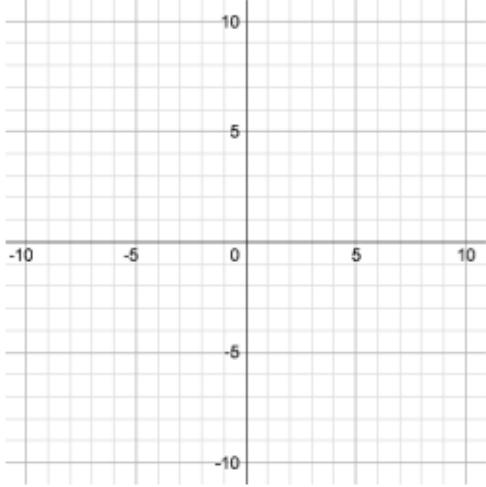
KEEP CALM AND TURN AND TALK

**Clear the last two lines.**

4. **Create** a line with positive slope. Use the Save Line button to keep it. **Create** a second line

on the same coordinate plane with negative slope. Use the Save Line button to keep it.

**Sketch** both lines on the coordinate plane below.
**Identify** 3 points on each line. List common point below.
Then **complete** the table.

| | Line 1: | Line 2: |
|---|---|---|
|  | y = ___x + _____  Points on line:  ( _____ , _____ )  ( _____ , _____ )  ( _____ , _____ ) | y = ___x + ___  Points on line:  ( _____,_____)  (_____,_____)  (_____,_____) |

Point in common (estimate if necessary)   ( _____ , _____ )

**Discuss** with your partner:
Do you think the two lines will ever cross again? **Explain** your reasoning.

KEEP CALM AND TURN AND TALK

Be prepared to share any ideas or questions

5. Athletic Awesomeness charges no entrance fee and $2 per game played.  Sports Stars charges $1 per game, but costs $3 to enter. Write an equation to model each gym, use the SIM to graph them on the same coordinate plane. What is the common point? What does this common point represent?