CC Integrated I eTools

Table of Contents

General Tools

Algebra Tiles (CPM)

This tutorial describes how to use the Algebra Tiles including additional features.

Click on the link below to access eTool.

Algebra Tiles (CPM)

1. The top bar has three main parts: Pen & Paper Icon, '?' Icon, and the Arrow Icon.

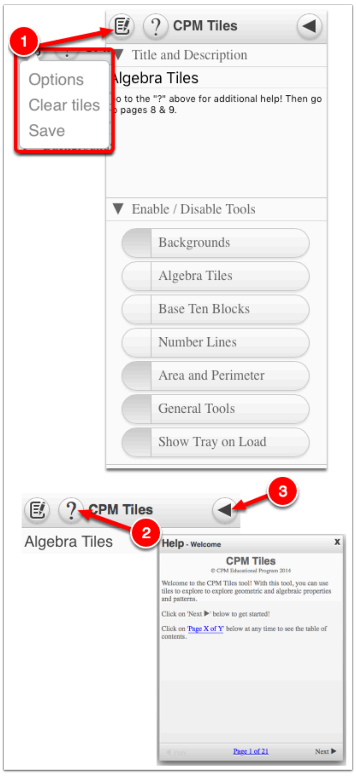
1. Select the Pen & Paper Icon to:

    Options - Add Title and Description and Enable/Disable Tools.

    Clear Tiles - This will remove all the tiles that are in the tile area.

    Save - This will save all the changes made.

2. Select the '?' icon for directions.
3. Select the Arrow Icon at the right to open and close the tray.



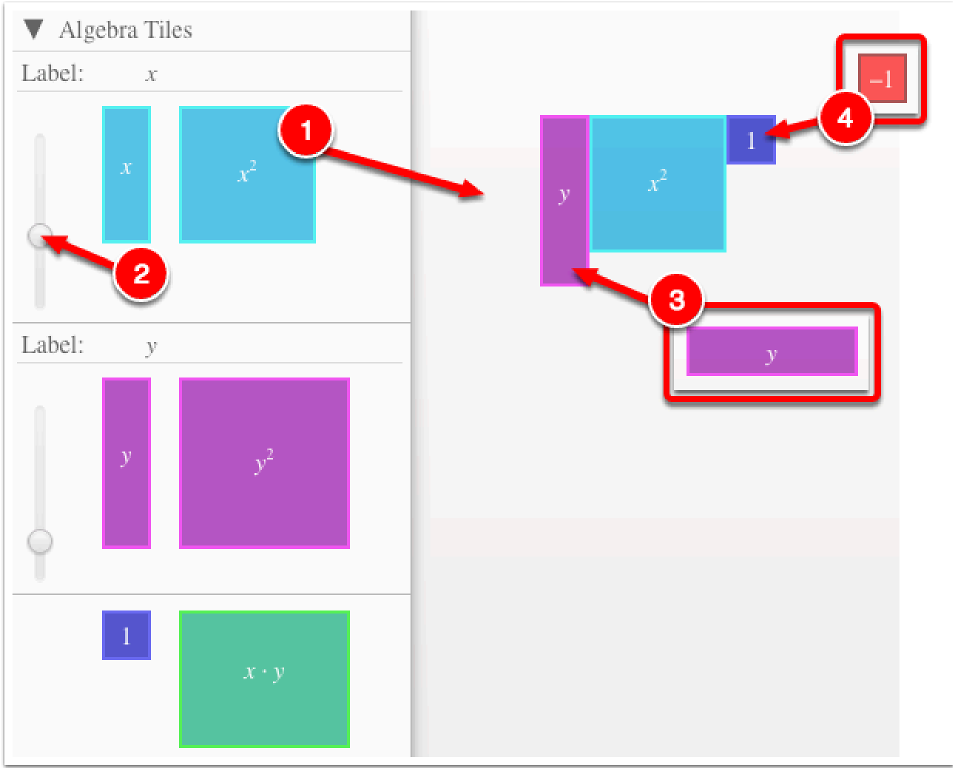
2. Drag tiles from the tray at the left to the display area at the right.

1. Select one of the tiles and drag it to the tile area.

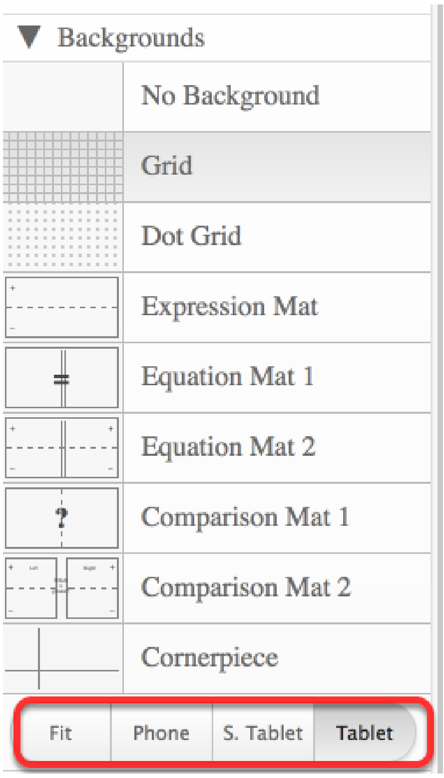
2. Use the sliders in the tray to change the size of the tiles.

3. Double click tiles to change orientation (horizontal/vertical).

4. Click on a tile once to change the sign (+ –).
   Note: The color of the tile will turn to red for negative sign.

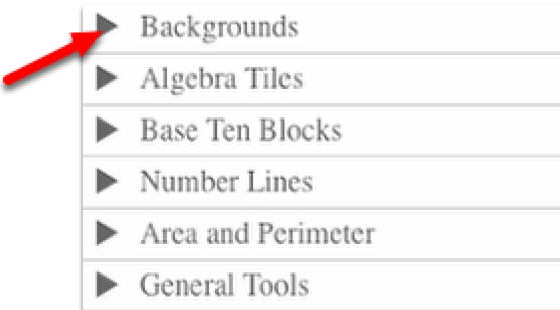


3. Choose from a variety of different mats. Also choose from a variety of sizes to fit on various devices.



4. Choose from a variety of different tiles:

- Click the arrow next to the tool to view/hide the options for each tool.



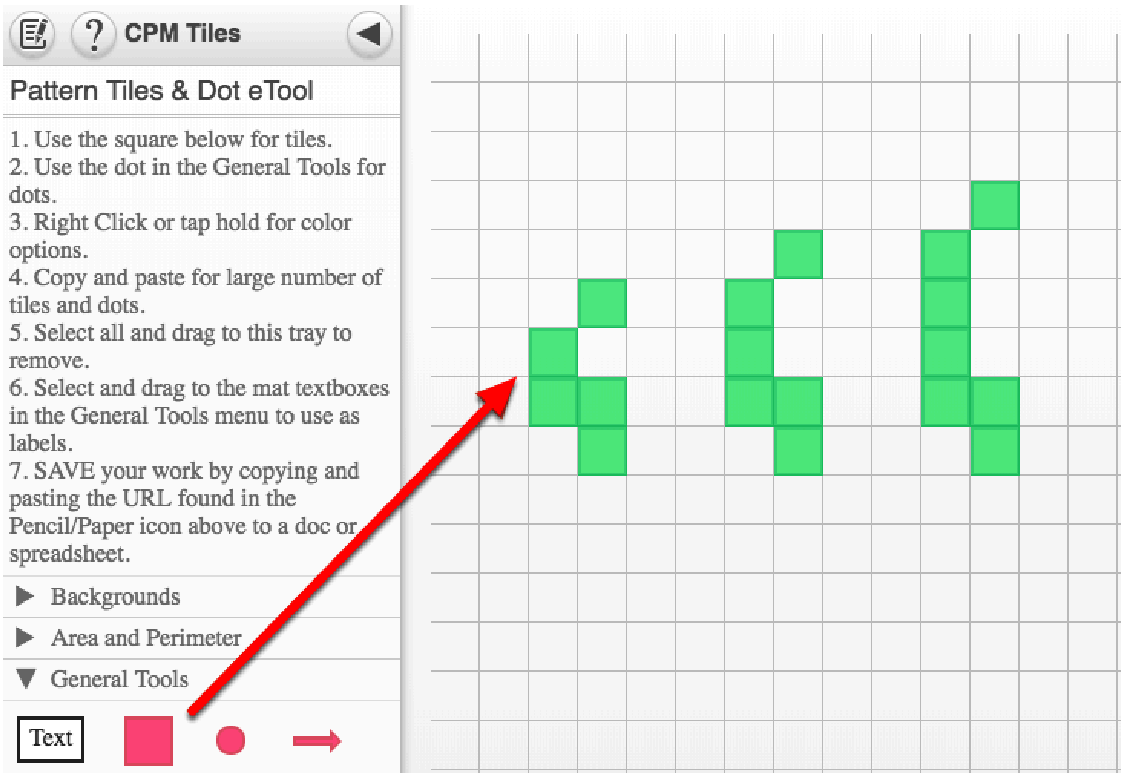
Pattern Tile & Dot Tool (CPM)

Click on the link below.

Pattern Tile & Dot Tool

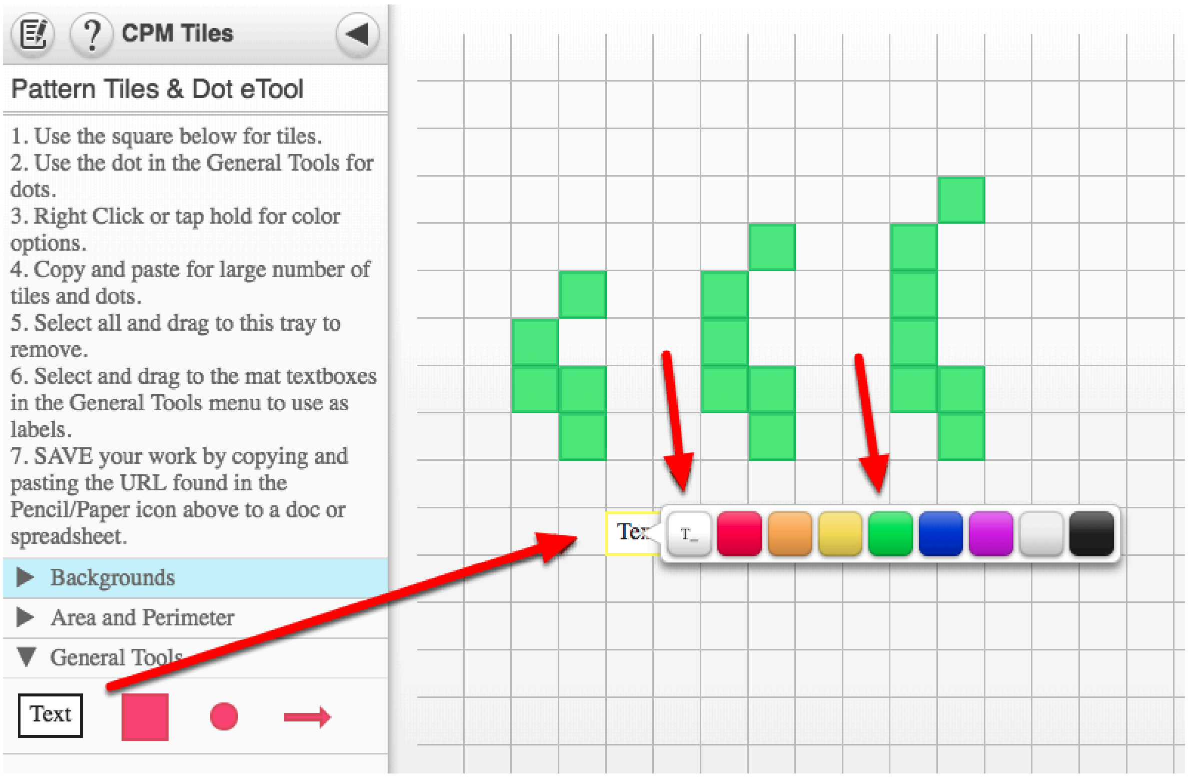
1. Drag tiles from the tray to the Display area.

- Add tiles and copy and paste them to the display area.
- Select all tiles and drag to the tray to remove the tiles.



2. Textboxes and Dots

- Located in the General Tools
- Drag out and choose border/no border and color.
- Double click to rotate.
- Click to add text.


CPM Tiles
Pattern Tiles & Dot eTool
1. Use the square below for tiles.
2. Use the dot in the General Tools for dots.
3. Right Click or tap hold for color options.
4. Copy and paste for large number of tiles and dots.
5. Select all and drag to this tray to remove.
6. Select and drag to the mat textboxes in the General Tools menu to use as labels.
7. SAVE your work by copying and pasting the URL found in the Pencil/Paper icon above to a doc or spreadsheet.
Backgrounds
Area and Perimeter
General Tools
Text

Rigid Transformations eTool (CPM)

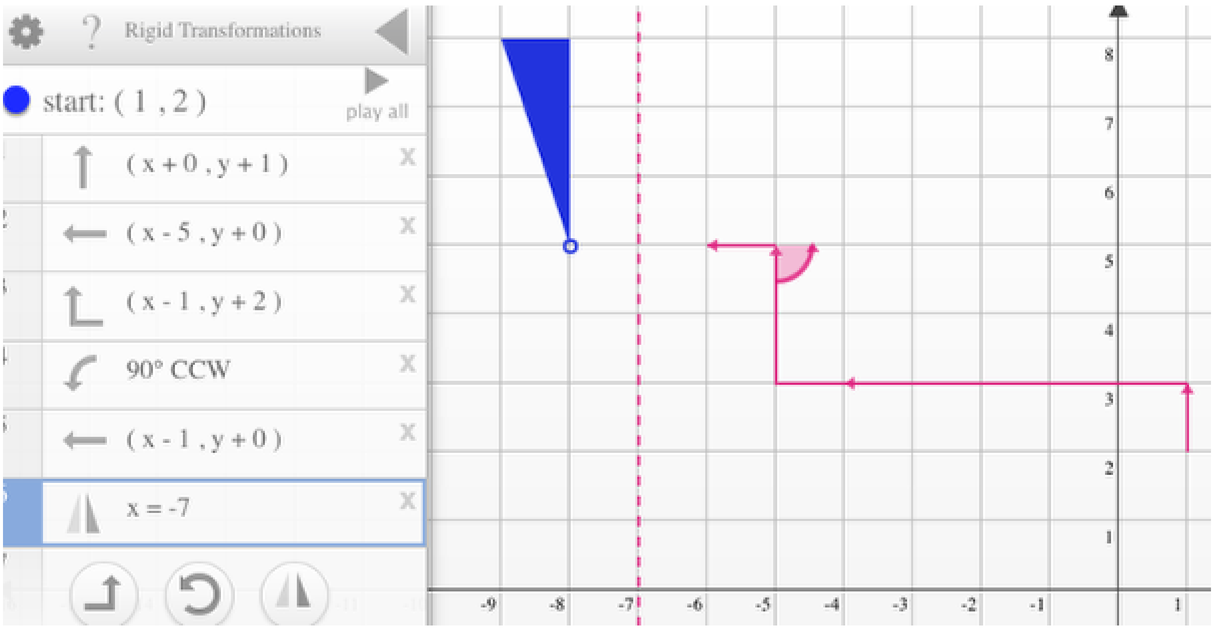
This eTool will record the steps you create showing translation, rotation, and reflection.

Click on the first link for the eTool. Click on the video links to view the use of the eTool.

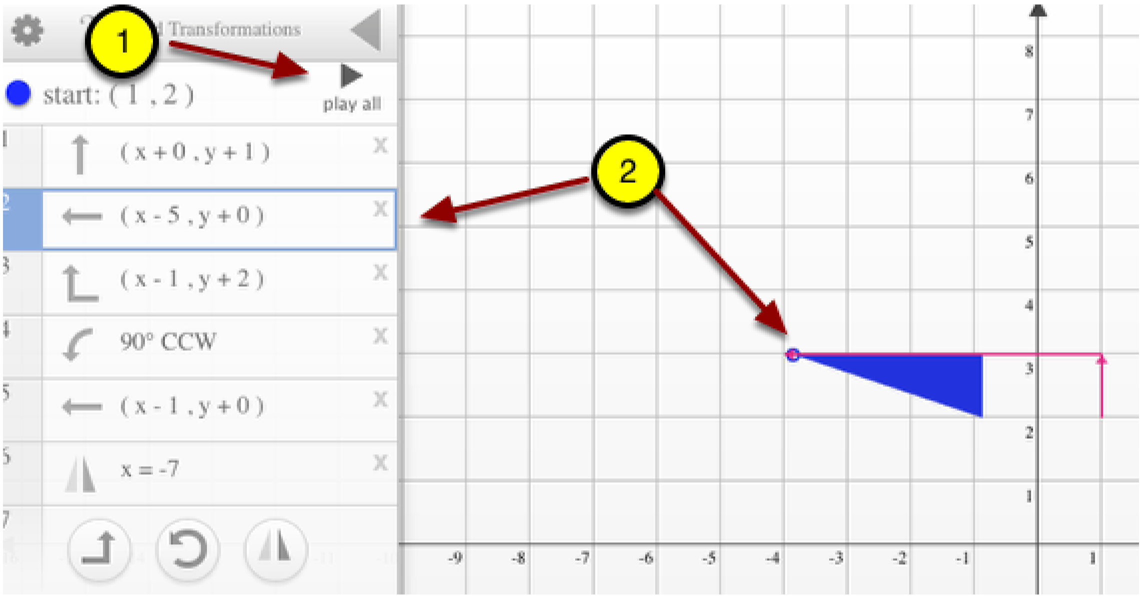
- Twelve games using the key lock are also available.
- This tool is designed so that teachers/students can create many more games.

Rigid Transformations
Using RT Tool
Creating an RT Puzzle

1. Steps are shown in the Tray at the left while the action occurs in the Display Area at the right.

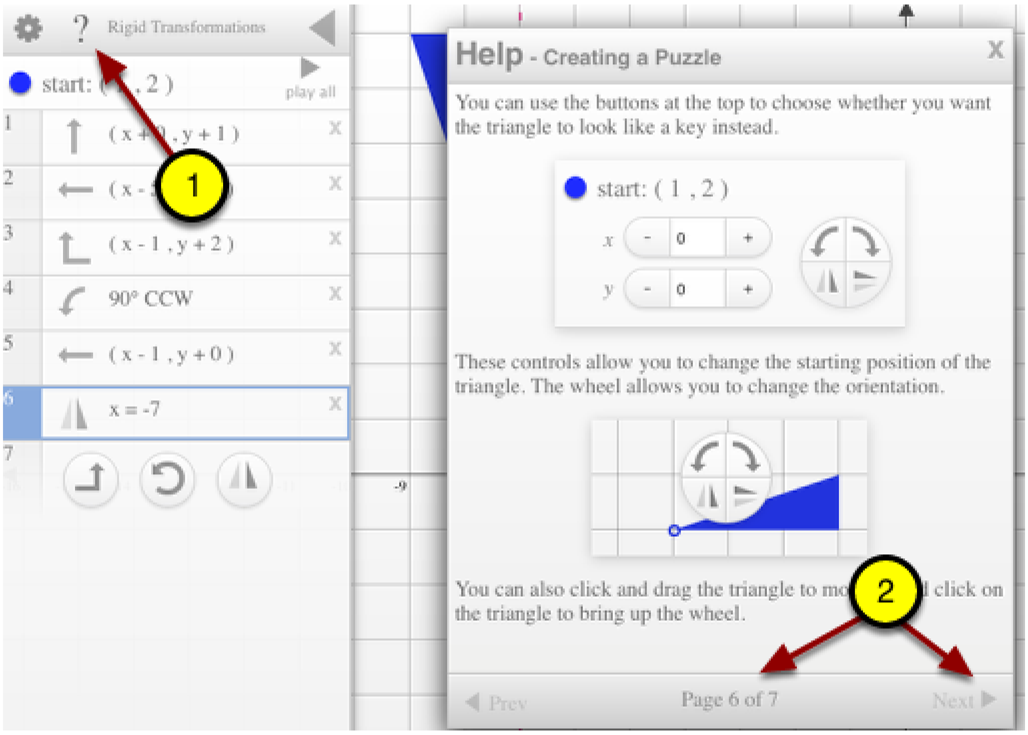


2. When playing, active steps are highlighted.



3. In the gear menu, you can create puzzles, clear, or save your projects.

4. Check the "?" for more help or watch the videos above.



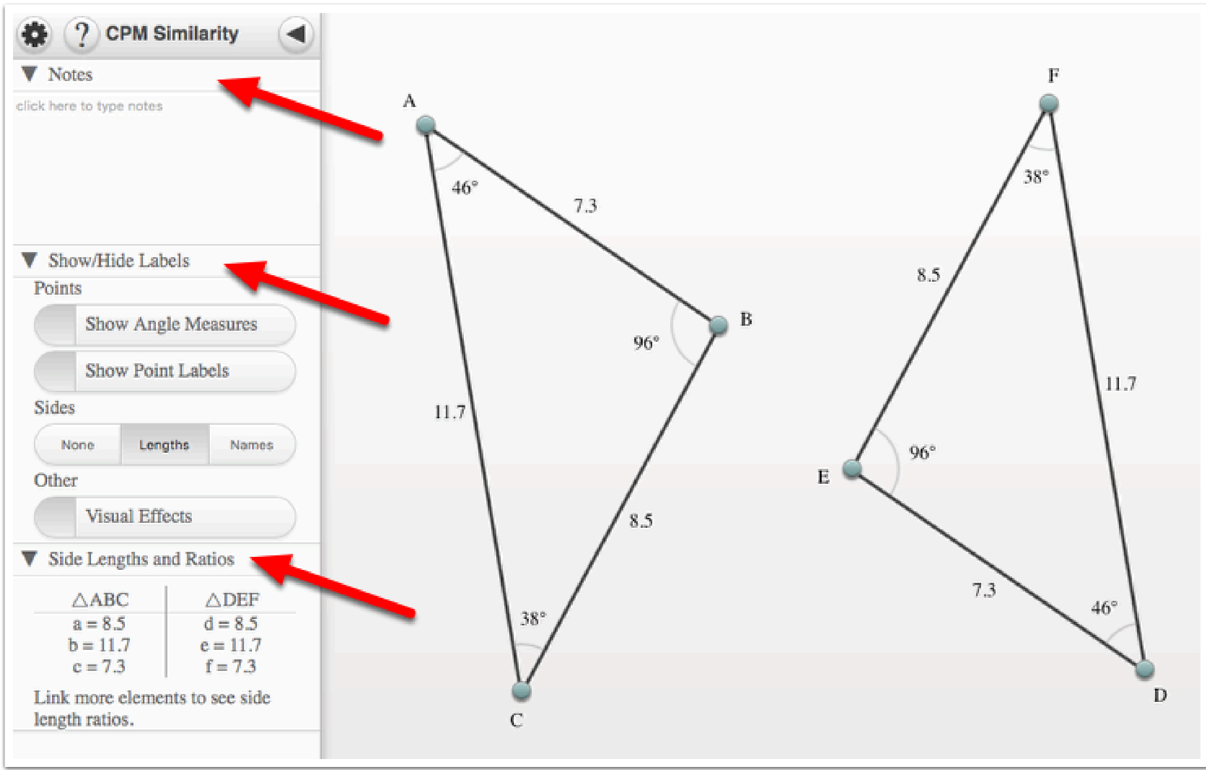
Similarity Toolkit (CPM)

The similarity toolkit allows students to explore two triangles to determine congruency or similarity given SSS, SSA, SAS, AAA, etc.. Students show how two triangles are similar or congruent using rigid transformations (translation, rotation, and reflexion).

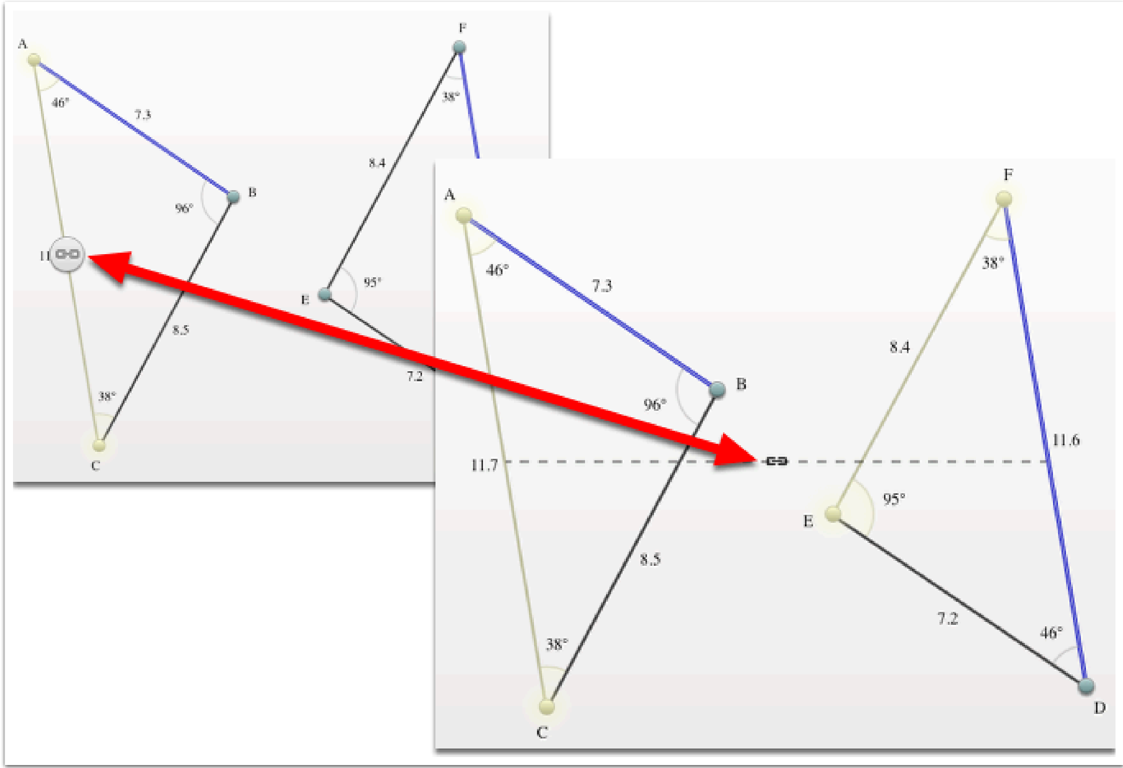
1. Click on the "Similarity Toolkit" link below. For additional help, click on the "Similarity Toolkit Video".

Similarity Toolkit Video
Similarity Toolkit (CPM)

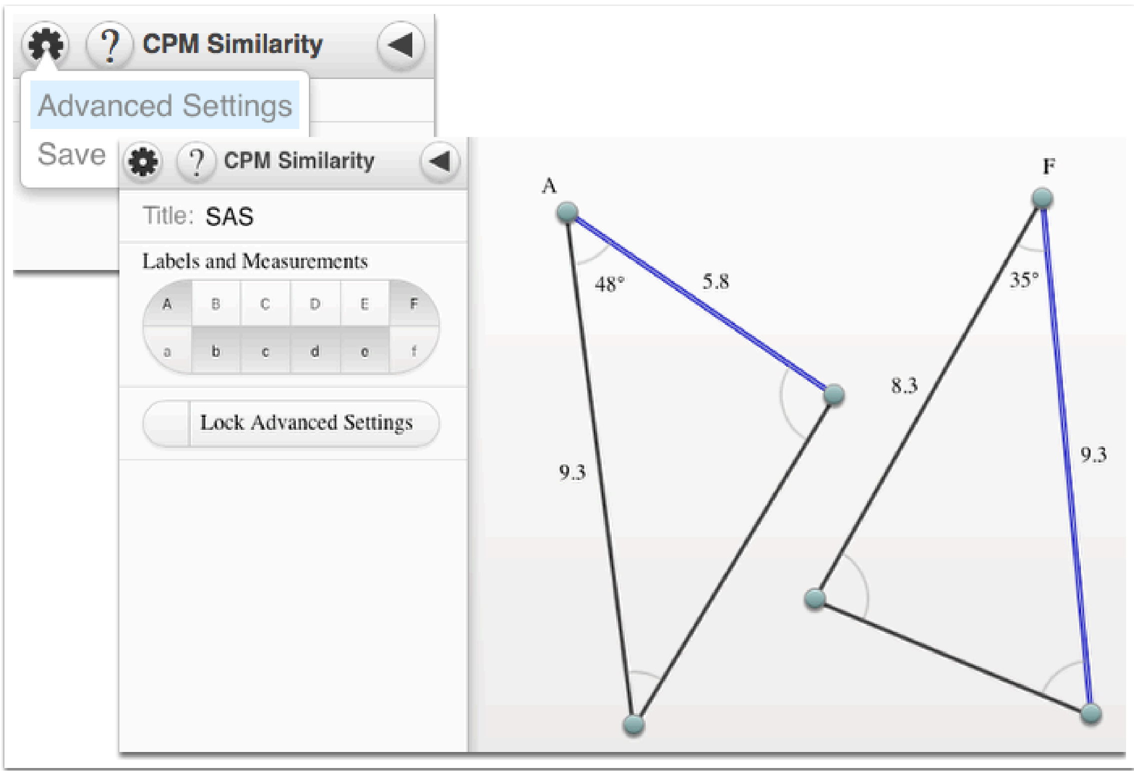
2. Similarity Toolkit Basic Controls:



3. Indicate what sides/angles are similar/congruent.



4. By going to the Advanced Settings, indicate what angles and sides you want shown!



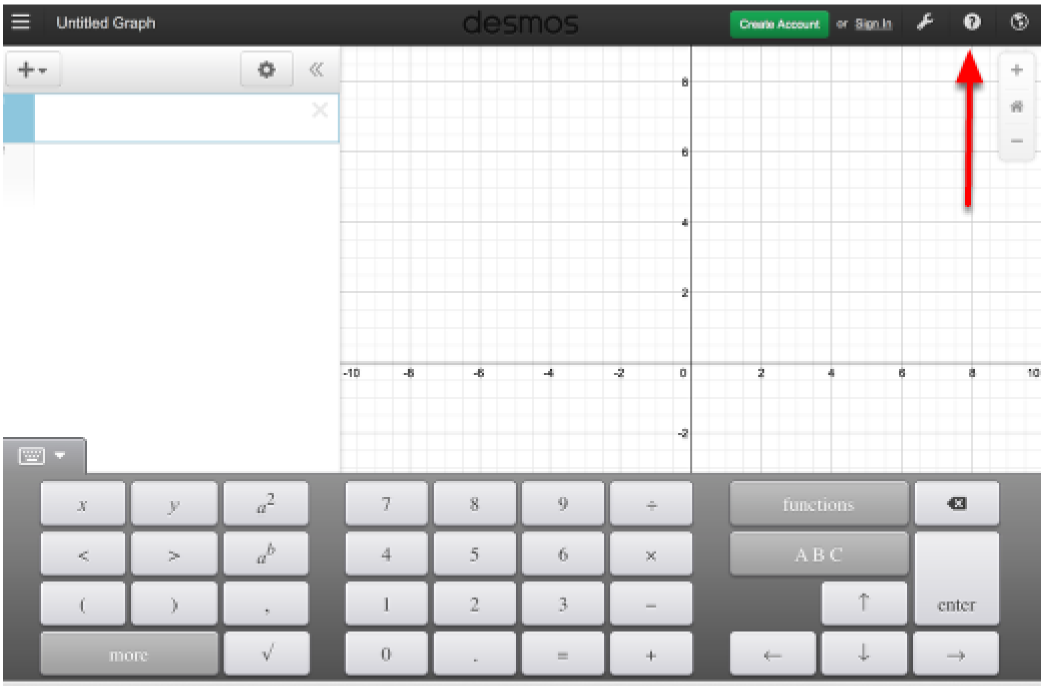
Desmos Graphing Calculator

This free graphing calculator allows students to create a free account to save all of their graphs, animations, and projects created.

Click on the "Desmos Graphing Calculator" link below.

Desmos Graphing Calculator

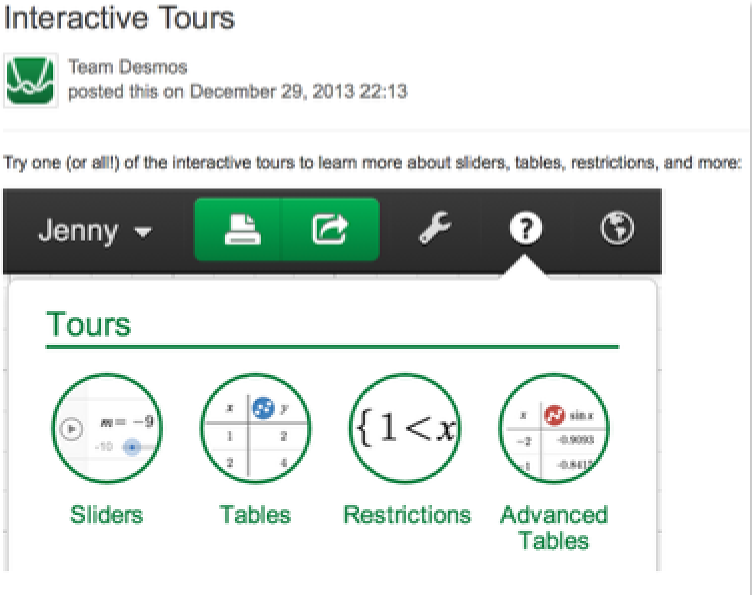
1. Click on all of the buttons. Try it out! For extra help, click the "?".



2. Click on the interactive tours below for help to create:

Sliders
Tables
Advanced Tables
Restrictions

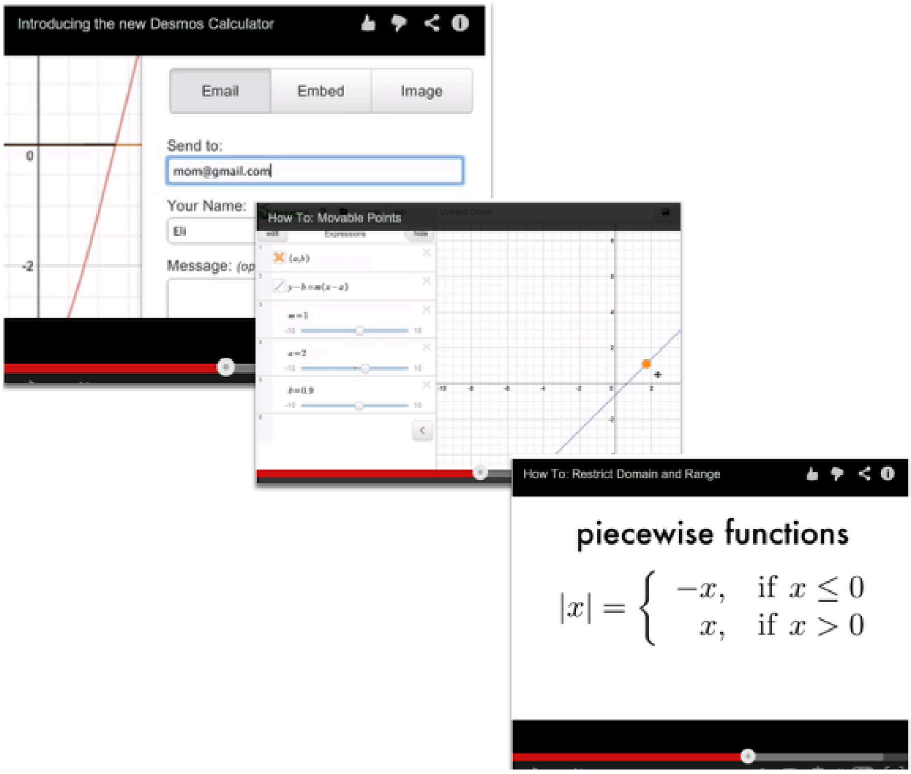
3. The interactive tours will NOT let you make a mistake! Try the links above!



4. Need additional help? Watch these very short excellent videos!

Desmos Introduction
Moveable Points
Graph Inequalities
Piece-Wise Function

5. The video links will help you with many of your graphing projects!



6. If you still need help, check out Desmos "Knowledge Base"

[Desmos Knowledge Base]

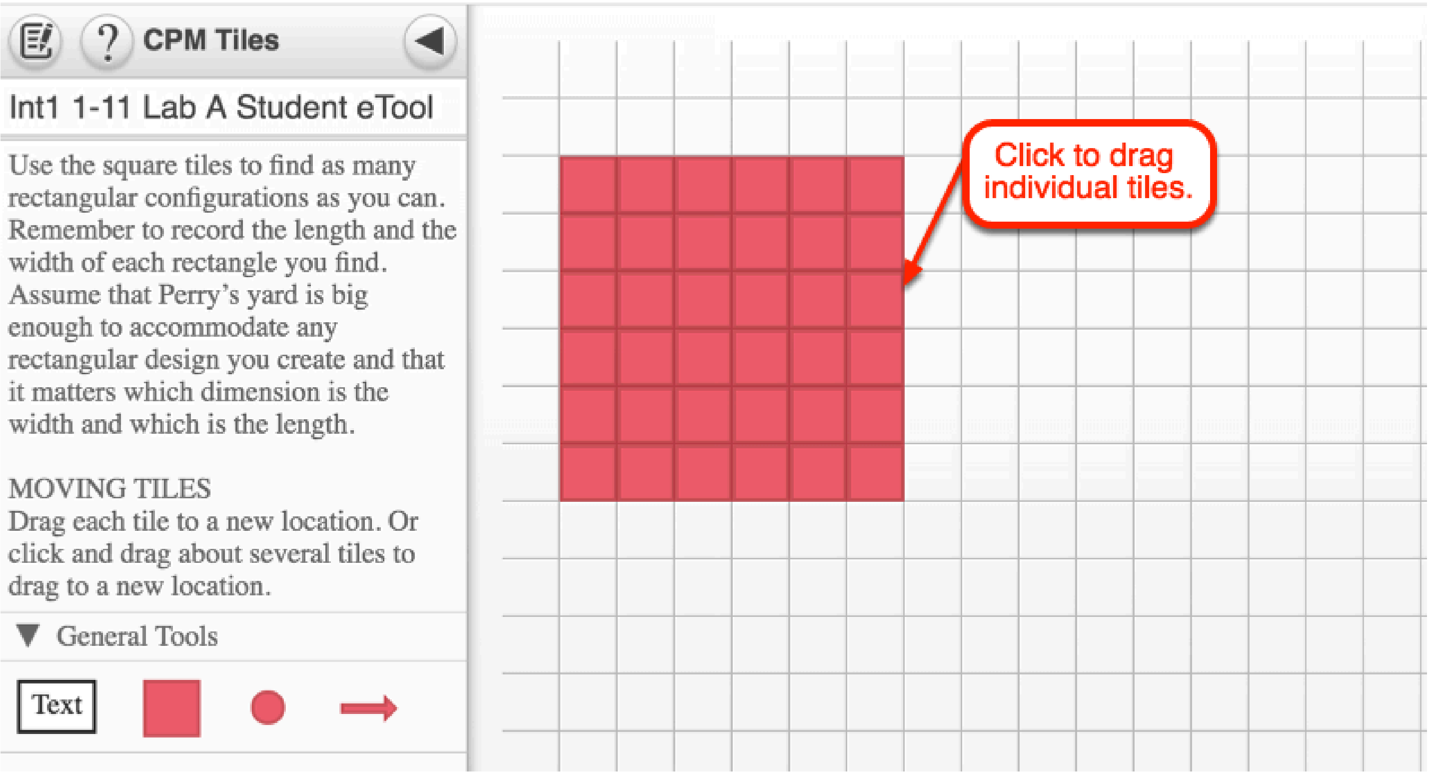
Chapter 1

INT1 1.1.2: 1-11 Lab A Student eTool (CPM)

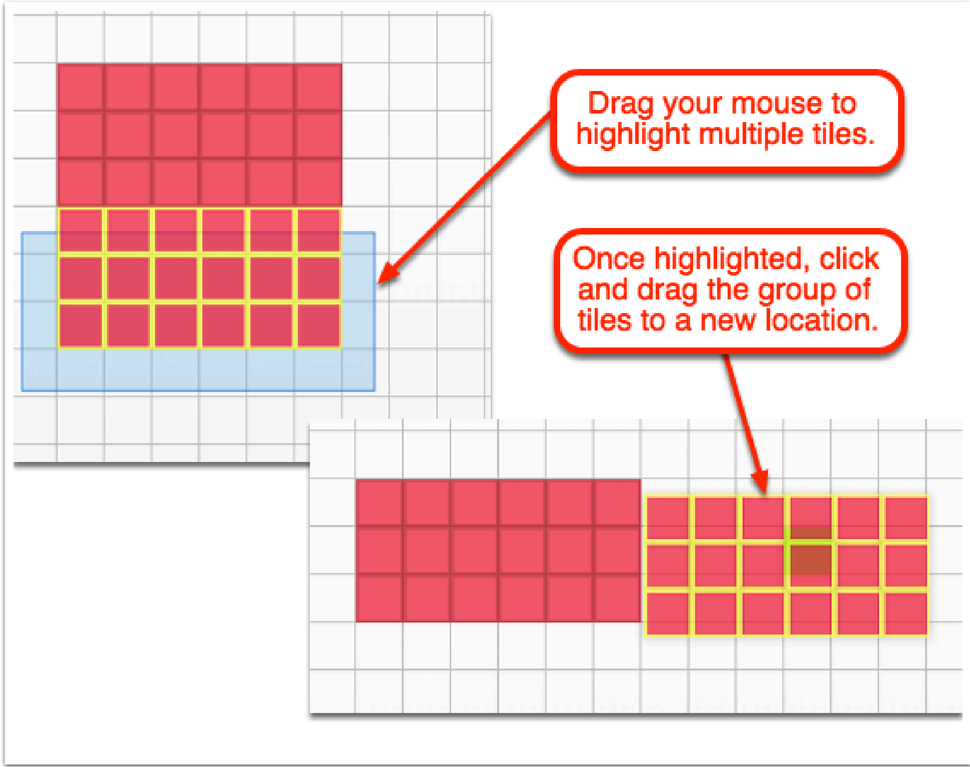
Click on the links below.

1-11 Lab A Student eTool (CPM)

1. Drag to build rectangular shapes recording the length and width.



2. Drag several tiles at once.

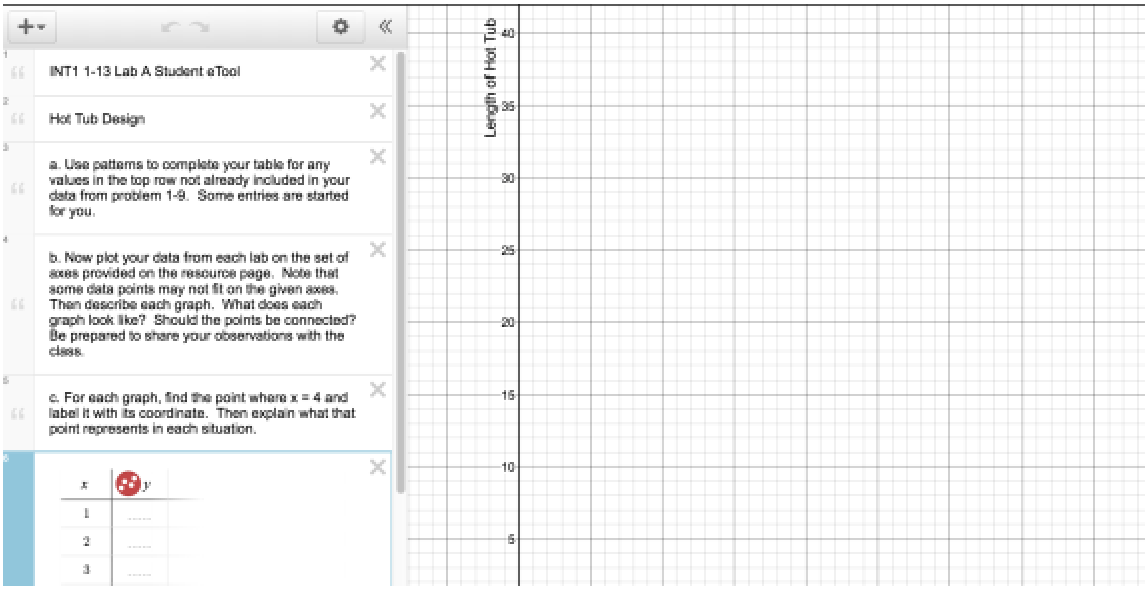


INT1 1.1.2: 1-13 Lab A, B, & C Student eTools (Desmos)

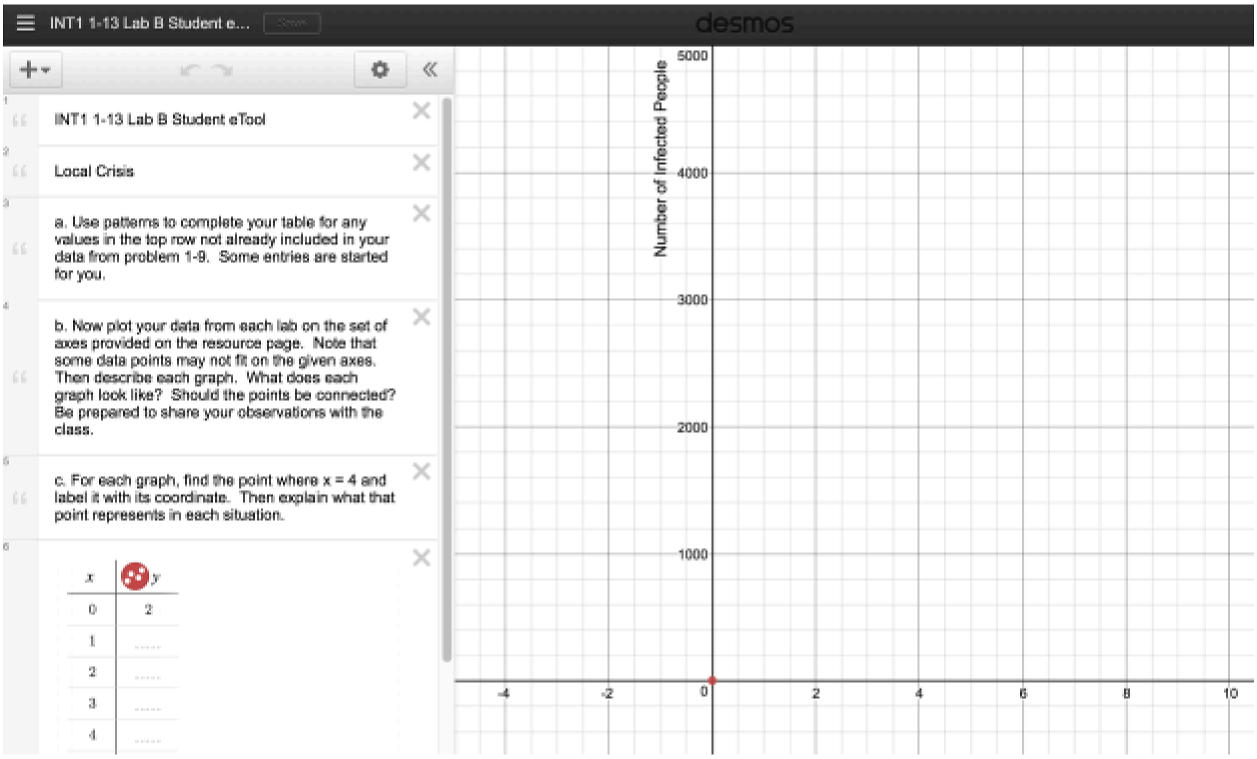
Click on the links below.

1-13 Lab A Student eTool (Desmos)
1-13 Lab B Student eTool (Desmos)
1-13 Lab C Student eTool (Desmos)

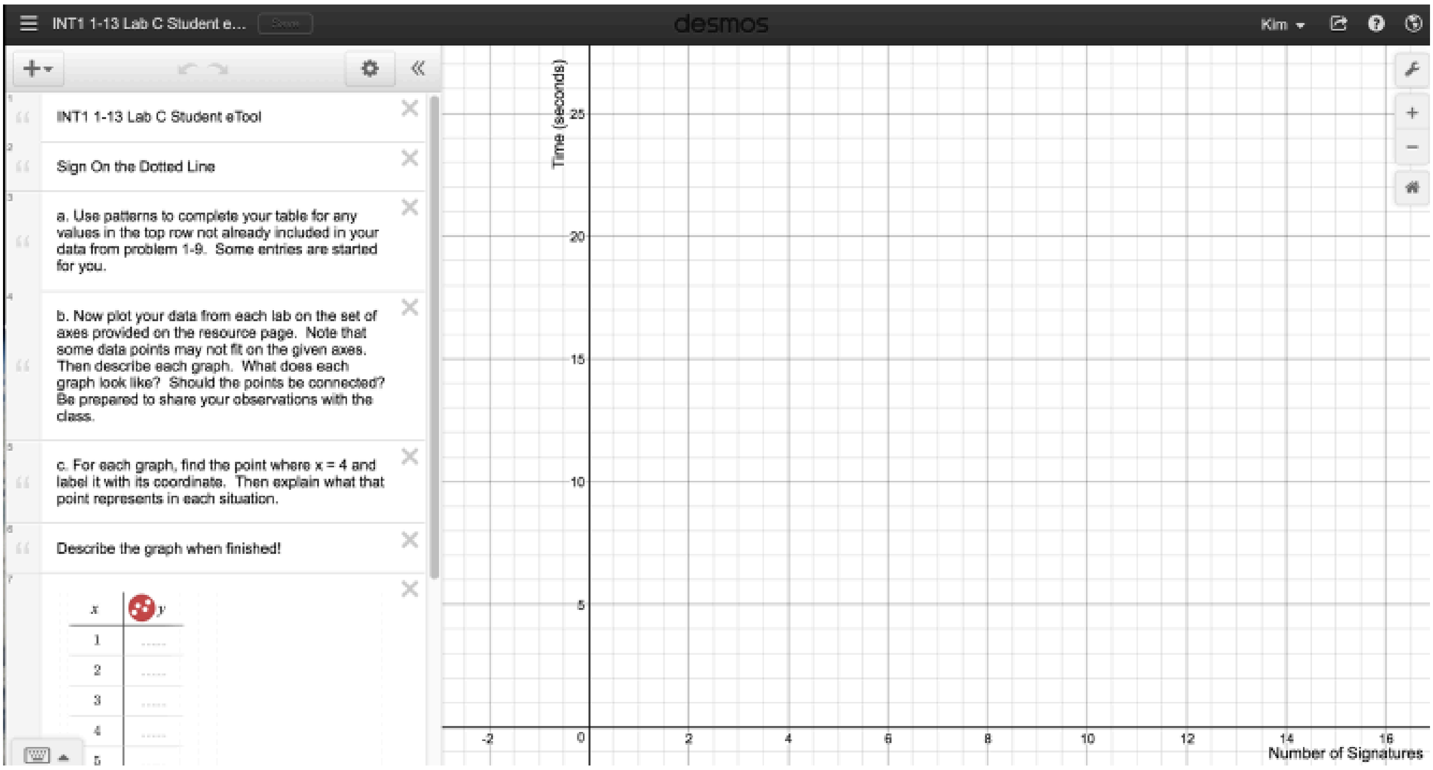
1. 1-13 Lab A Student eTool (Desmos):



2. Int1 1-13 Lab B Student eTool (Desmos):



3. Int1 1-13 Lab C Student eTool (Desmos):

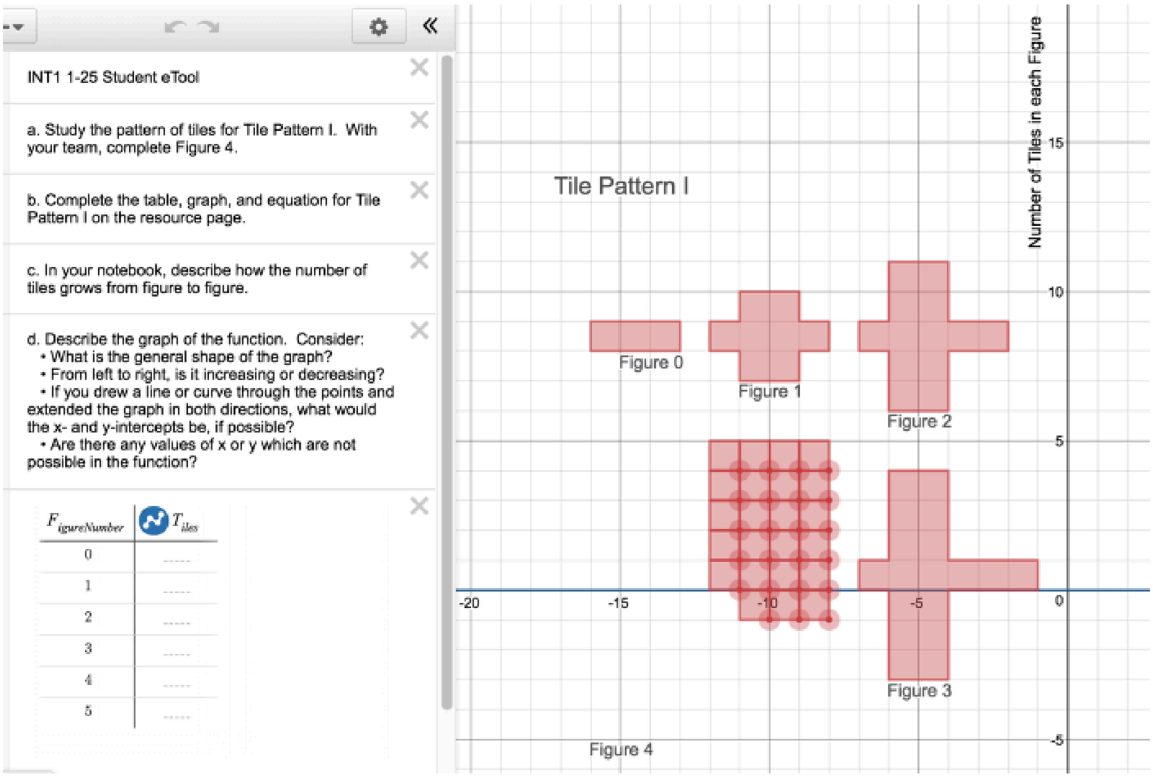


INT1 1.1.3: 1-25 & 1-26 Student eTools (Desmos)

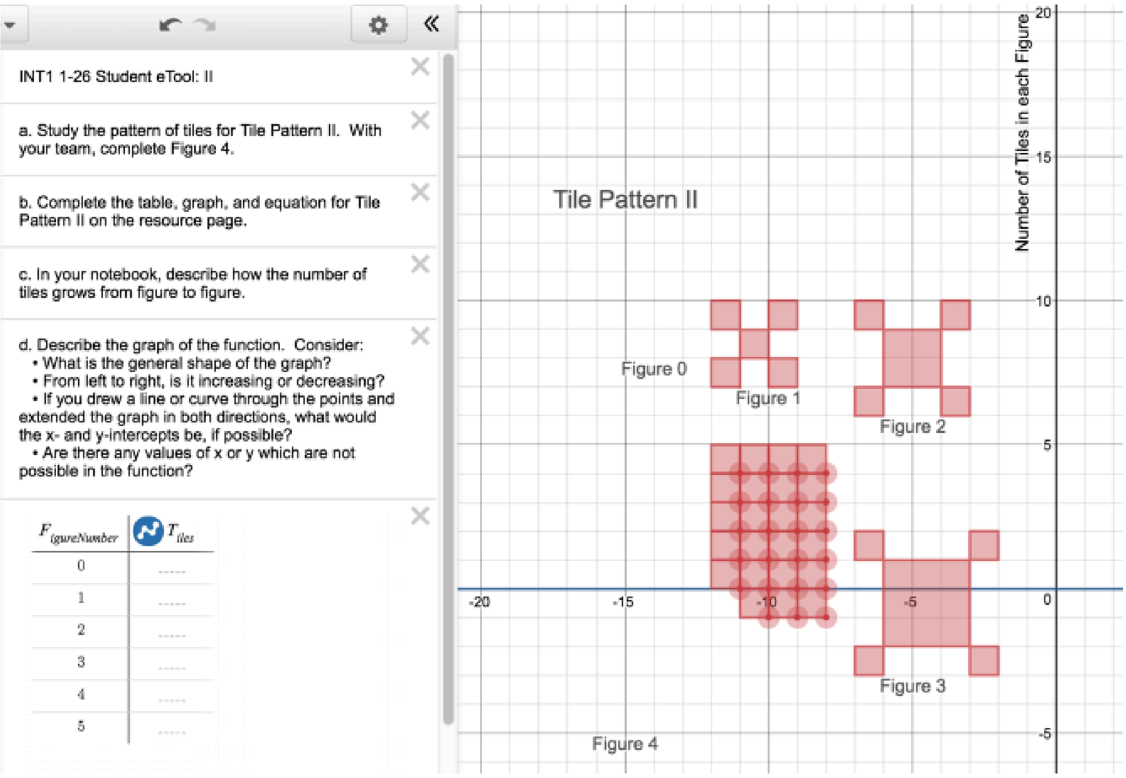
Click on the links below.

[INT1 1-25 Student eTool (Desmos)]
[INT1 1-26 Student eTool II (Desmos)]
[INT1 1-26 Student eTool III (Desmos)]
[INT1 1-26 Student eTool IV (Desmos)]

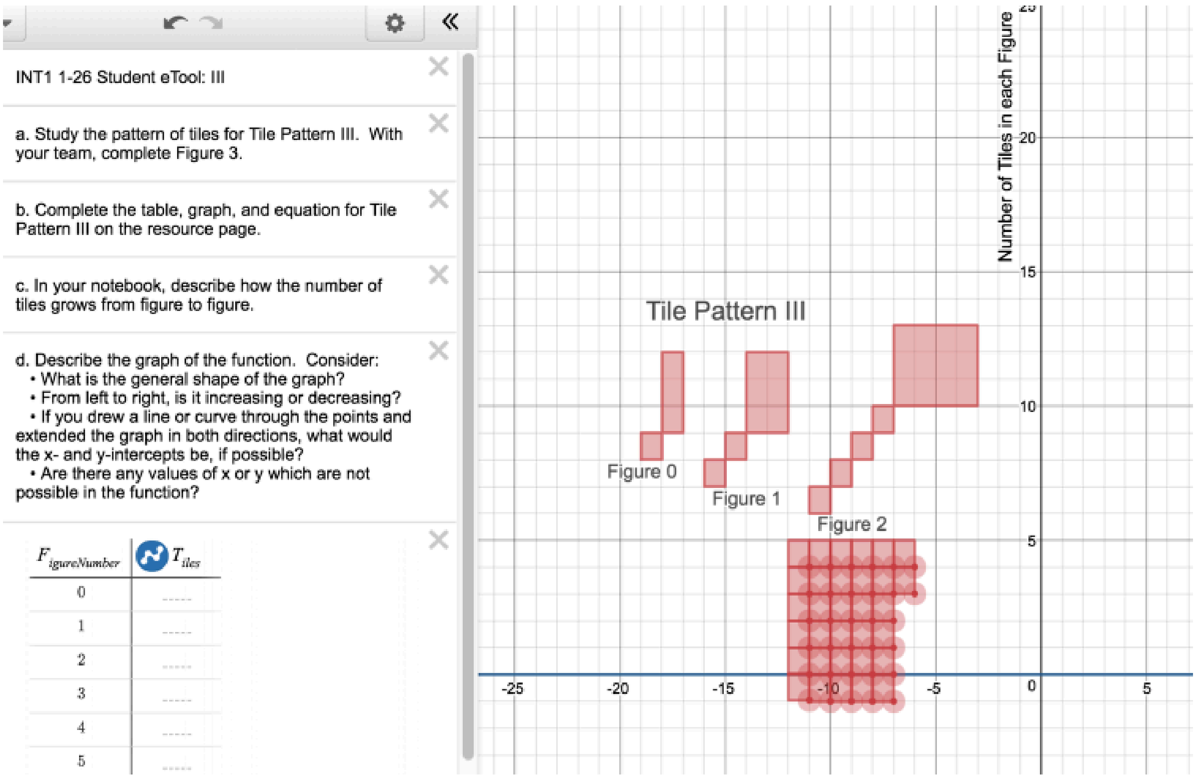
1. Int1 1-25 Student eTool:



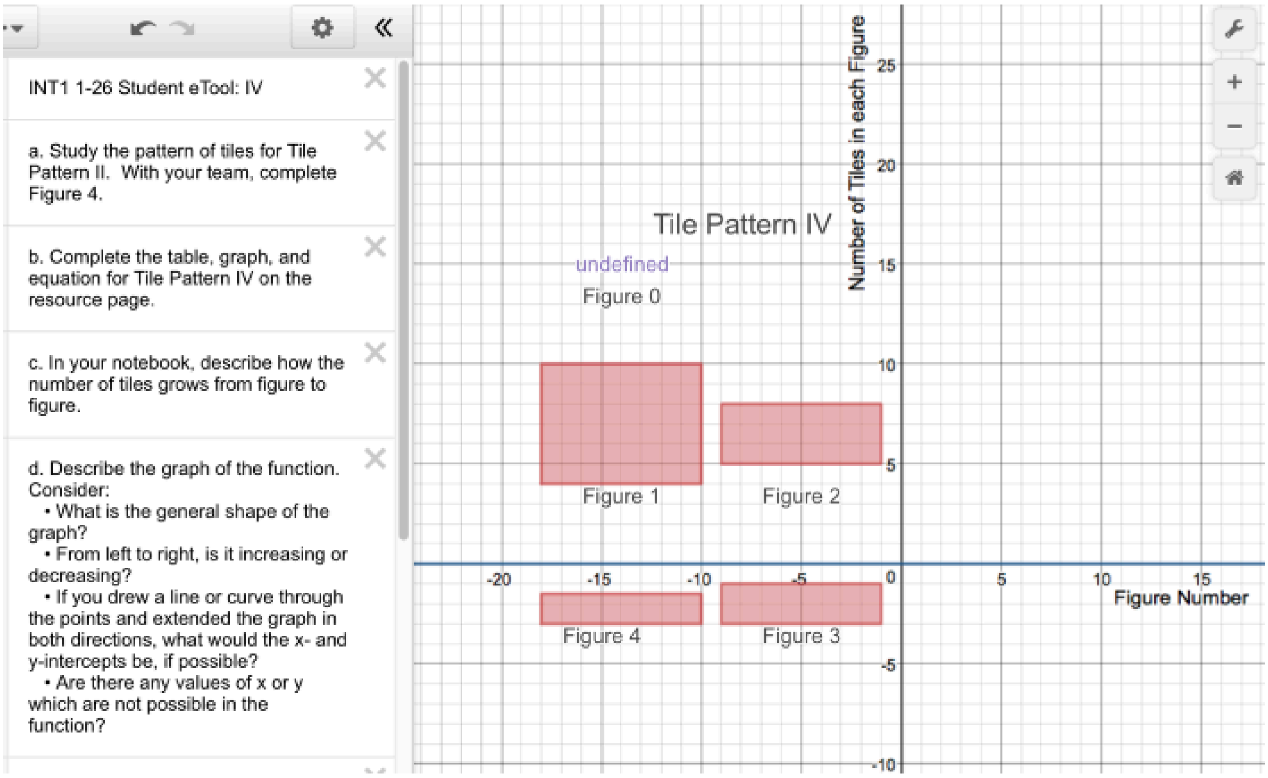
2. Int1 1-26 Student eTool II:



3. Int1 1-26 Student eTool III:



4. Int1 1-26 Student eTool IV:



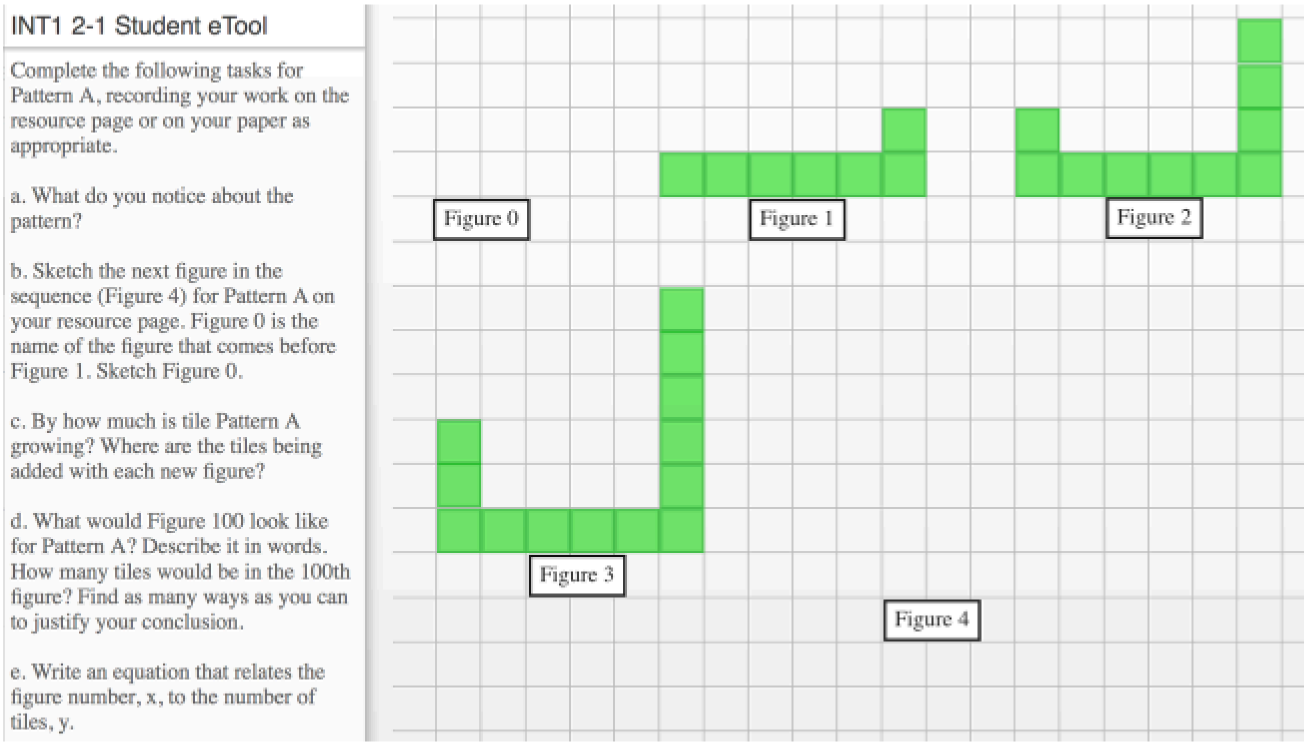
Chapter 2

INT1 2.1.1: 2-1, 2-2, & 2-5 Student eTools (CPM)

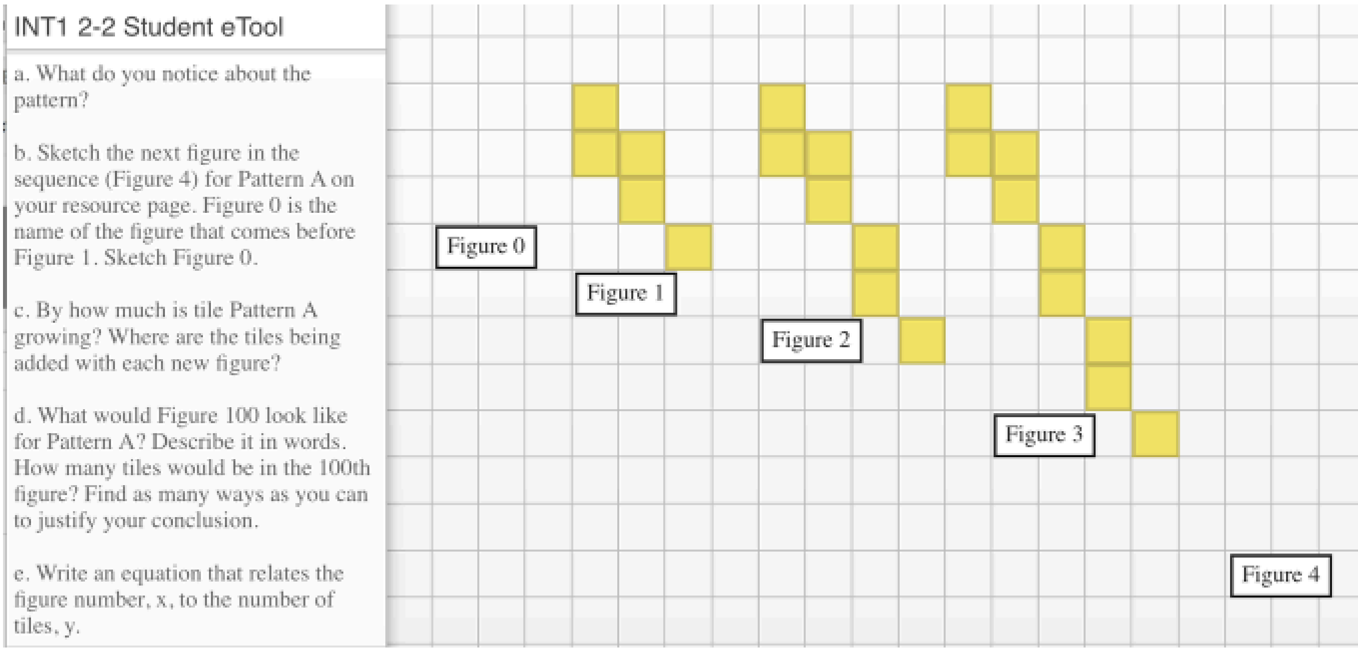
Click on the links below.

[INT1 2-1 Student eTool (CPM)]
[INT1 2-2 Student eTool (CPM)]
[INT1 2-5 Student eTool (CPM)]

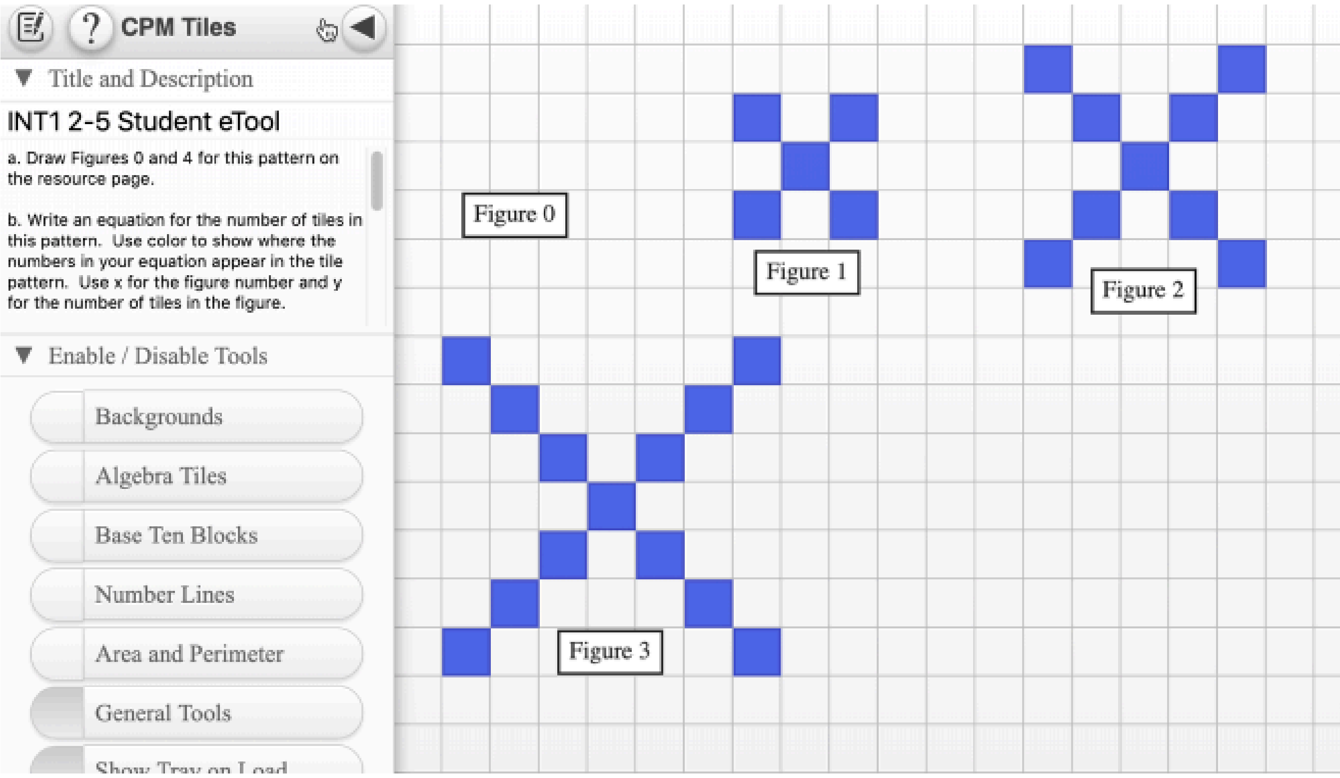
1. INT1 2-1 Student eTool (CPM):



2. INT1 2-2 Student eTool (CPM):



3. INT1 2-5 Student eTool (CPM):



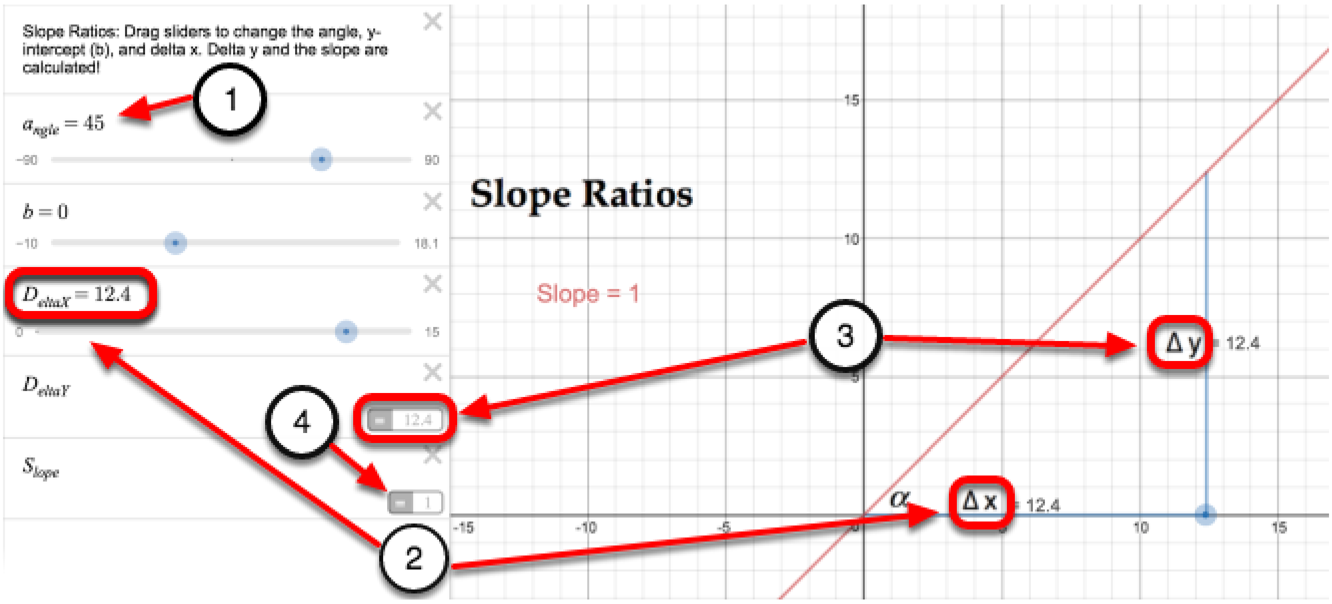
INT1 2.1.3: Slope Ratios (Desmos)

Click on the link below for the “Slope Ratios" eTool.

Slope Ratios

1. Use the sliders to:

- Select an angle.
- Change the length of the adjacent side, delta x.
- The opposite side length, delta y, and the slope are calculated below.

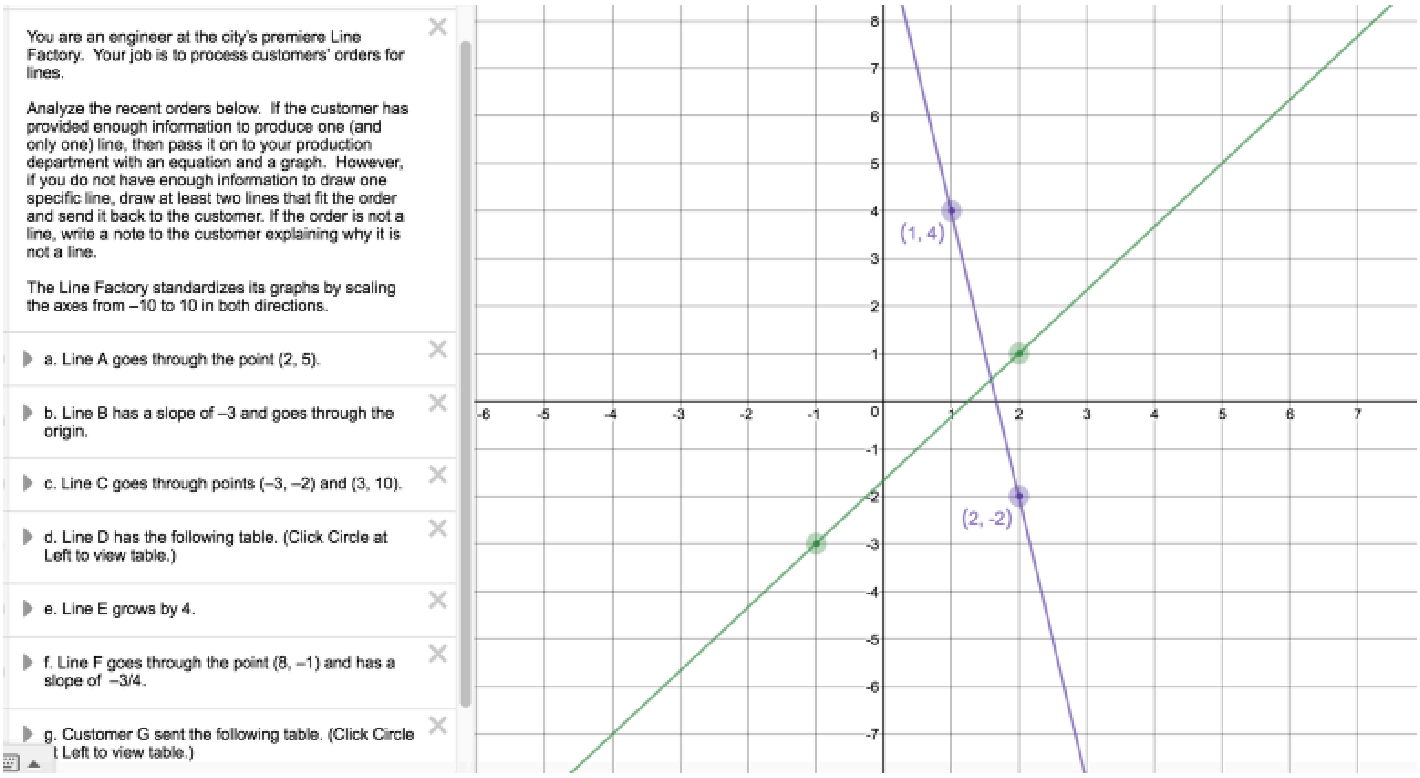


INT1 2.1.4: 2-36 Student eTool (Desmos)

Click on the link below.

[INT1 2-36 Student eTool (Desmos)]()

INT1 2-36 Student eTool (Desmos):

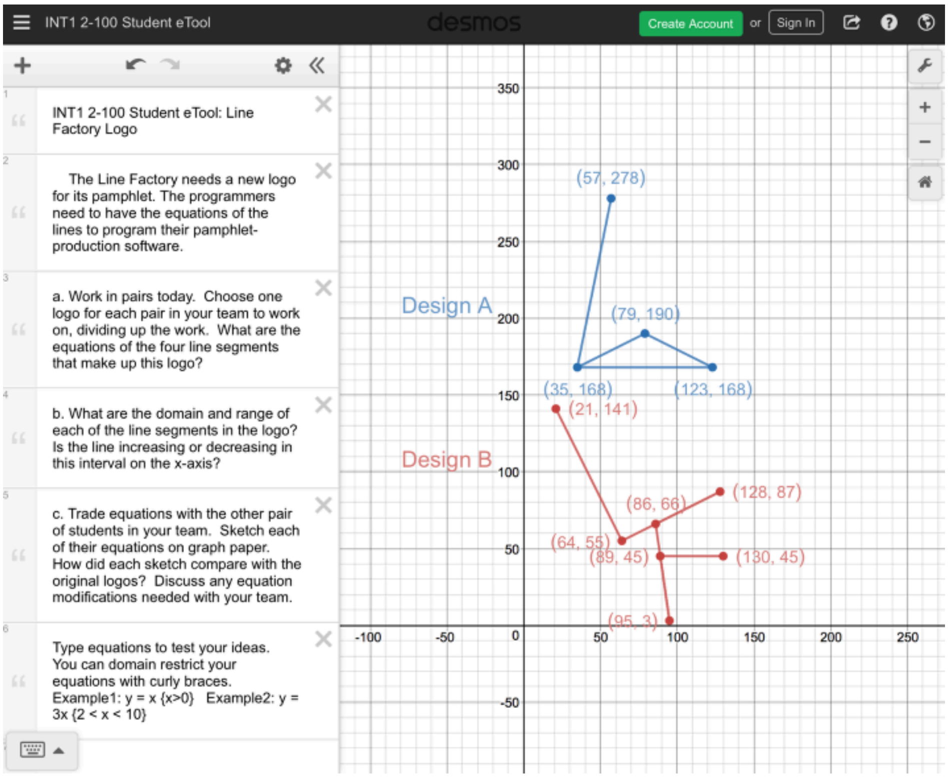


INT1 2.3.2: 2-100 Line Factory Logo Student eTool (Desmos)

Click on the link below.

INT1 2-100 Line Factory Logo Student eTool (Desmos)

1. INT1 2-100: Design A and B

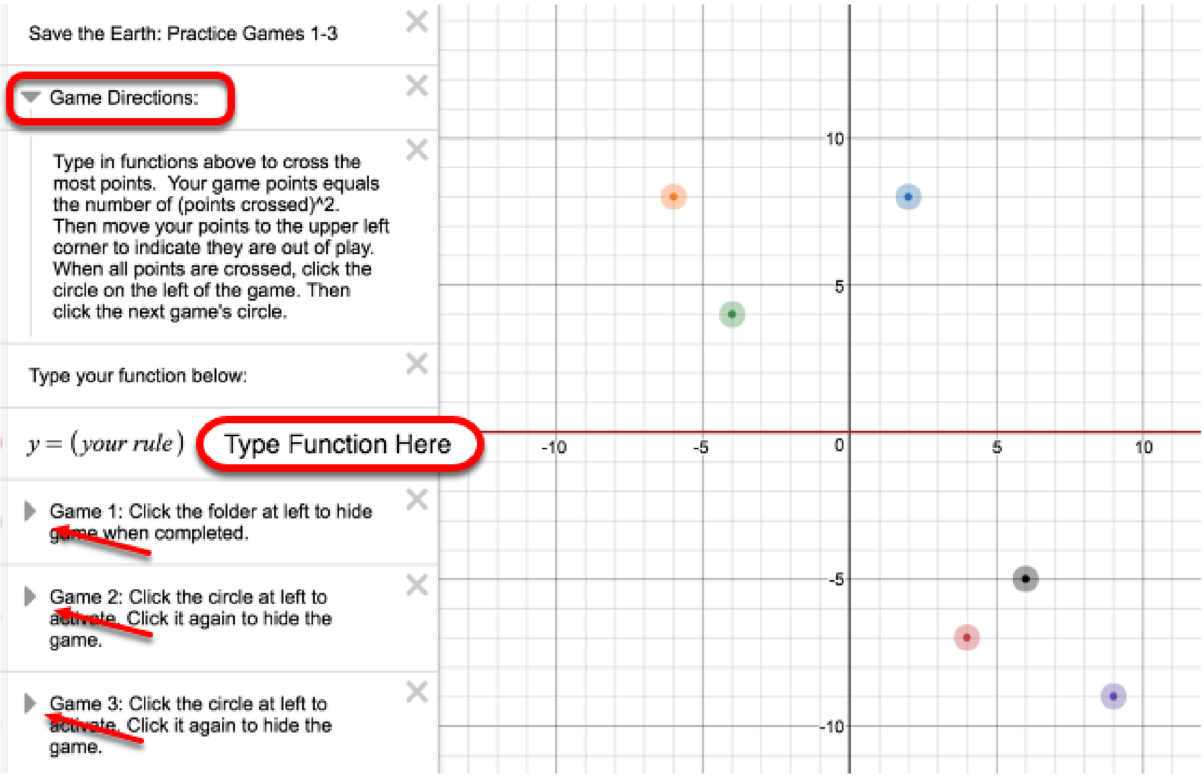


INT1 2.3.3: Save the Earth: Practice Games 1-3 (Desmos)

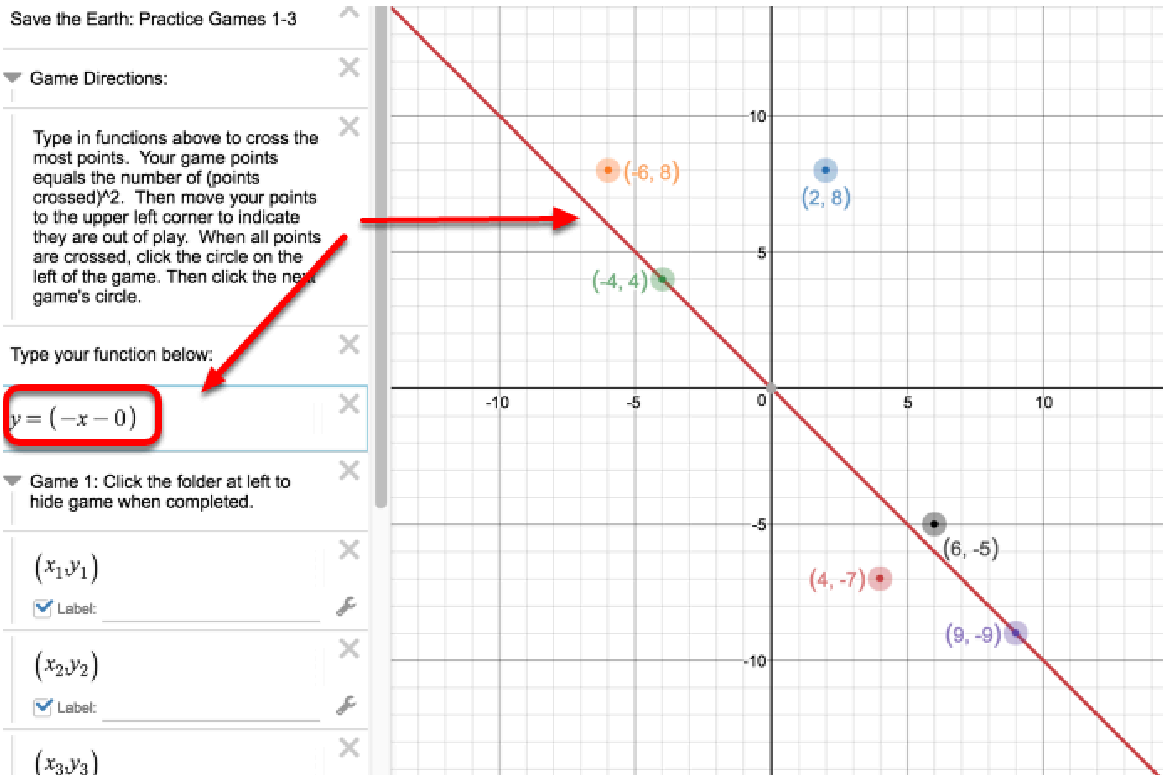
Click on the link below for the “Save the Earth"

INT1 Save the Earth: Practice Games 1-3 (Desmos)

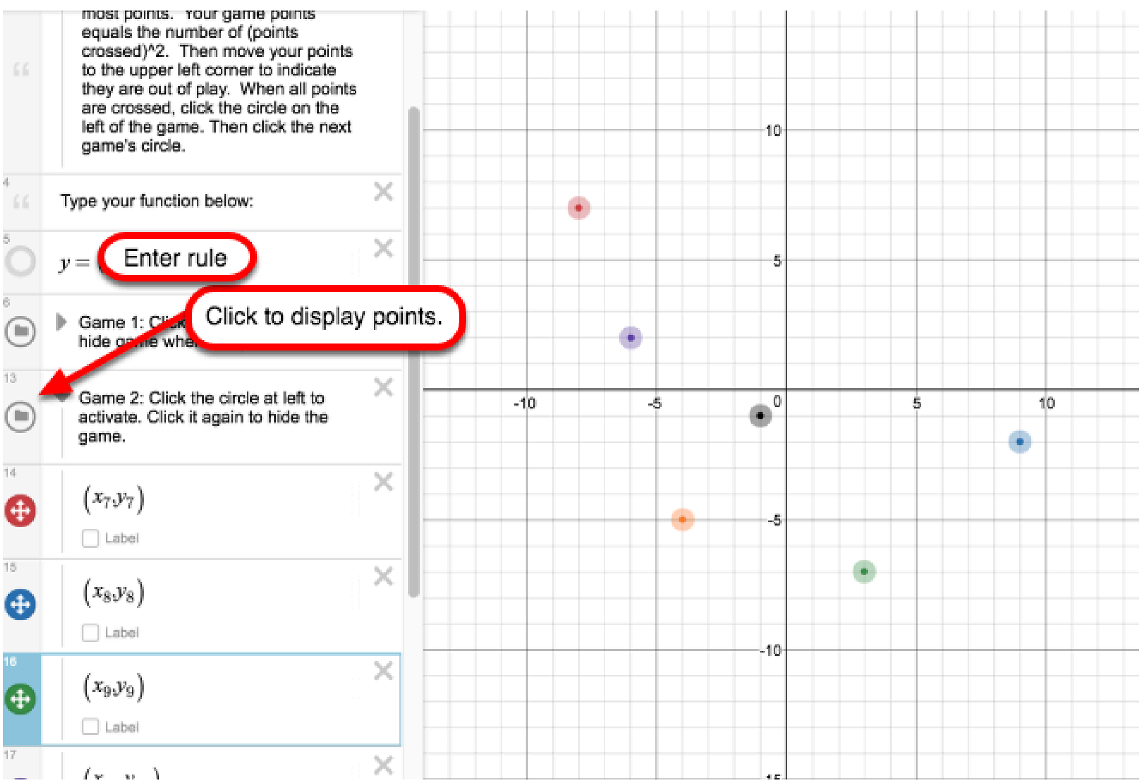
1. Click and unclick the Game desired.



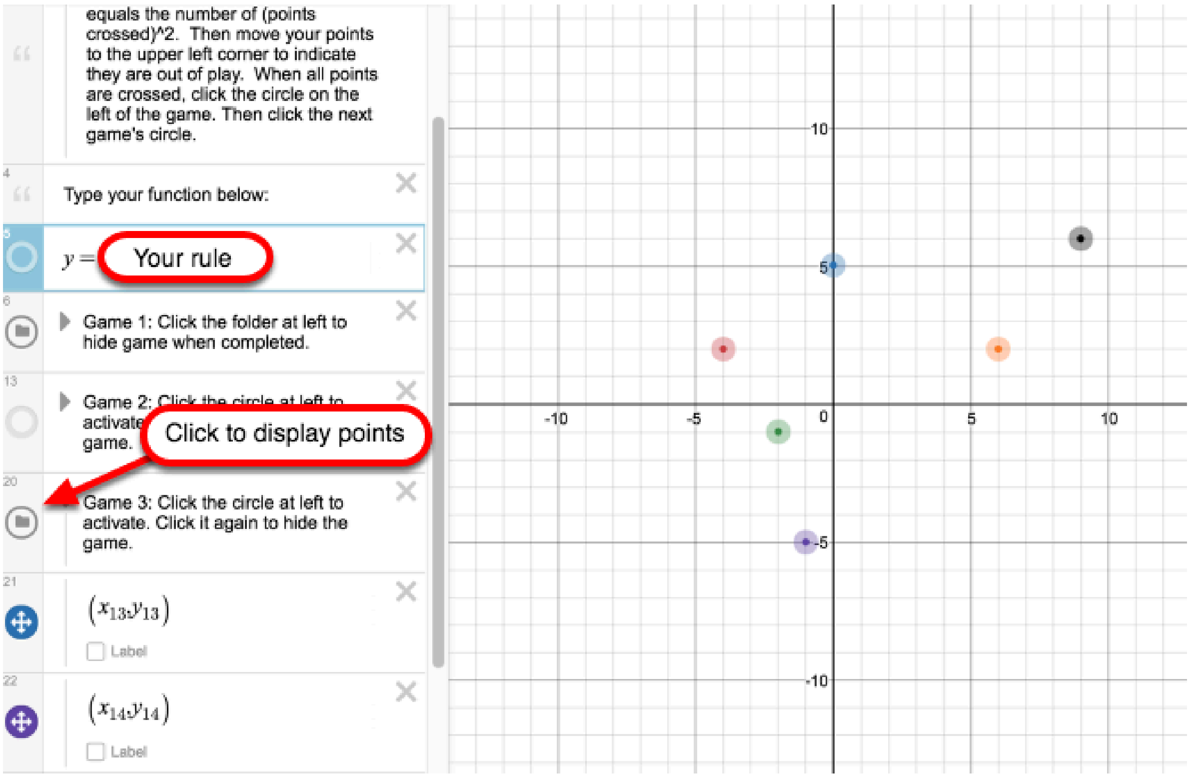
2. Game 1: See example below for an entered function.



3. Game 2:



4. Game 3:

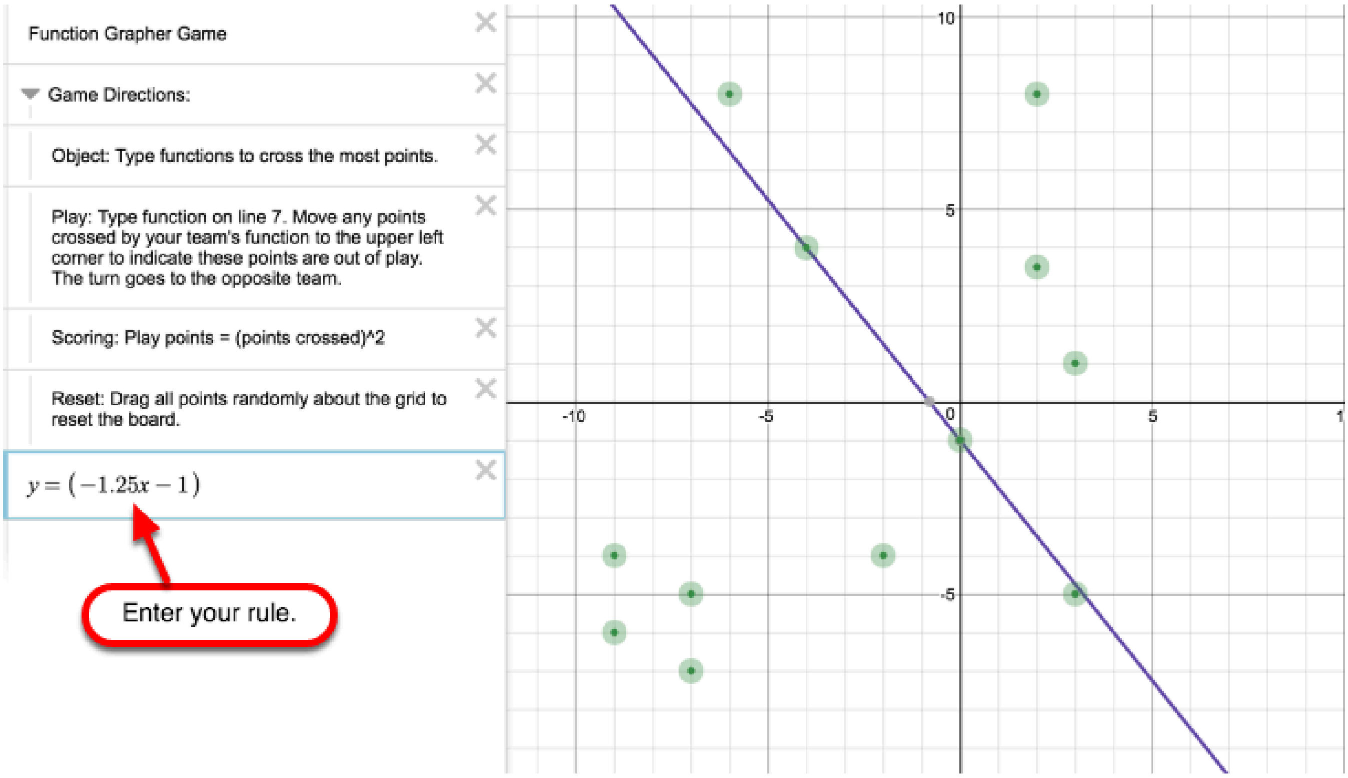

equals the number of (points crossed)^2. Then move your points to the upper left corner to indicate they are out of play. When all points are crossed, click the circle on the left of the game. Then click the next game's circle.
Type your function below:
y =
Your rule
Game 1: Click the folder at left to hide game when completed.
Game 2: Click the circle at left to activate game.
Click to display points
Game 3: Click the circle at left to activate. Click it again to hide the game.
(x_{13}, y_{13})
Label
(x_{14}, y_{14})
Label
10
5
-10
-5
0
5
10
-5
-10

INT1 2.3.3: Function Grapher Game (Desmos)

Click on the link below for the “Function Grapher Game"

INT1 Function Grapher Game (Desmos)

1. Enter your rule to cross the most points.



Chapter 3

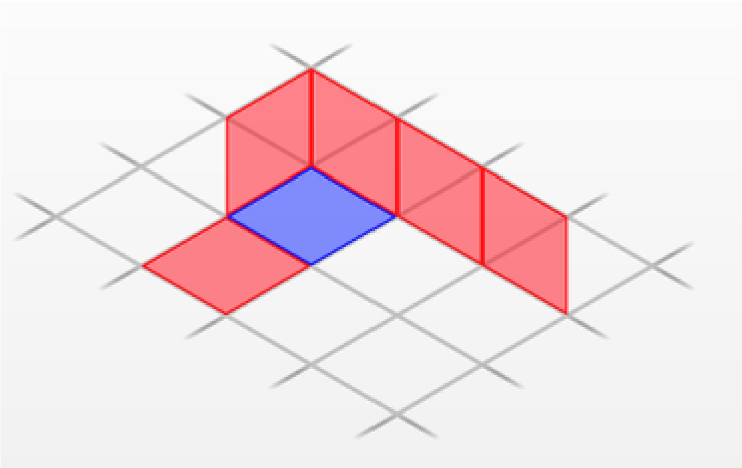
INT1 3.1.1: 3-1 3D Nets

These nets are interactive. Click on the sides to raise or lower them. Drag in a circular motion outside of the net to rotate in space. Go the the "?" for more help!

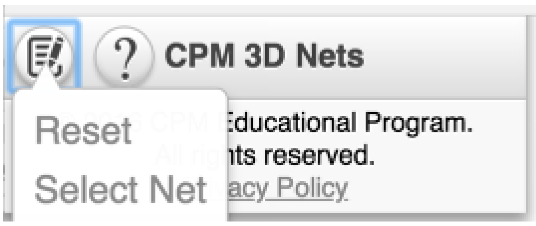
Click on the link below.

INT1 3-1 3D Nets (CPM)

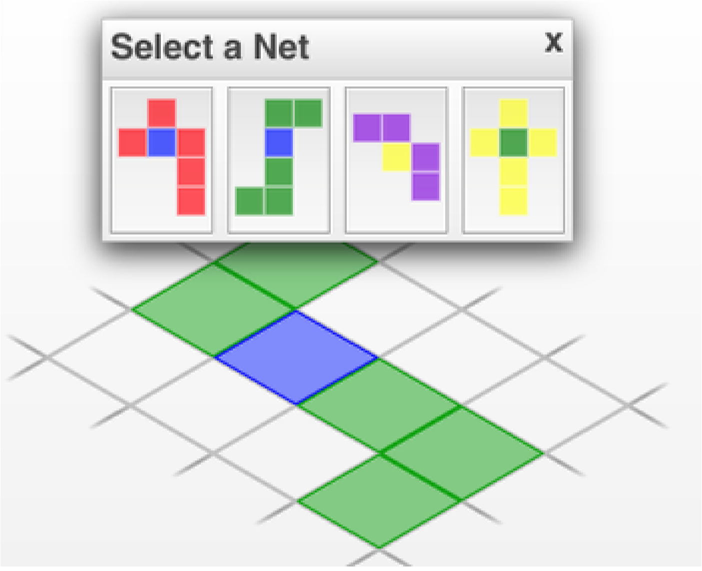
1. INT1 3-1a:



2. Get the other nets by going to the Edit menu!



3. INT1 3-1b:



4. INT1 3-1c:

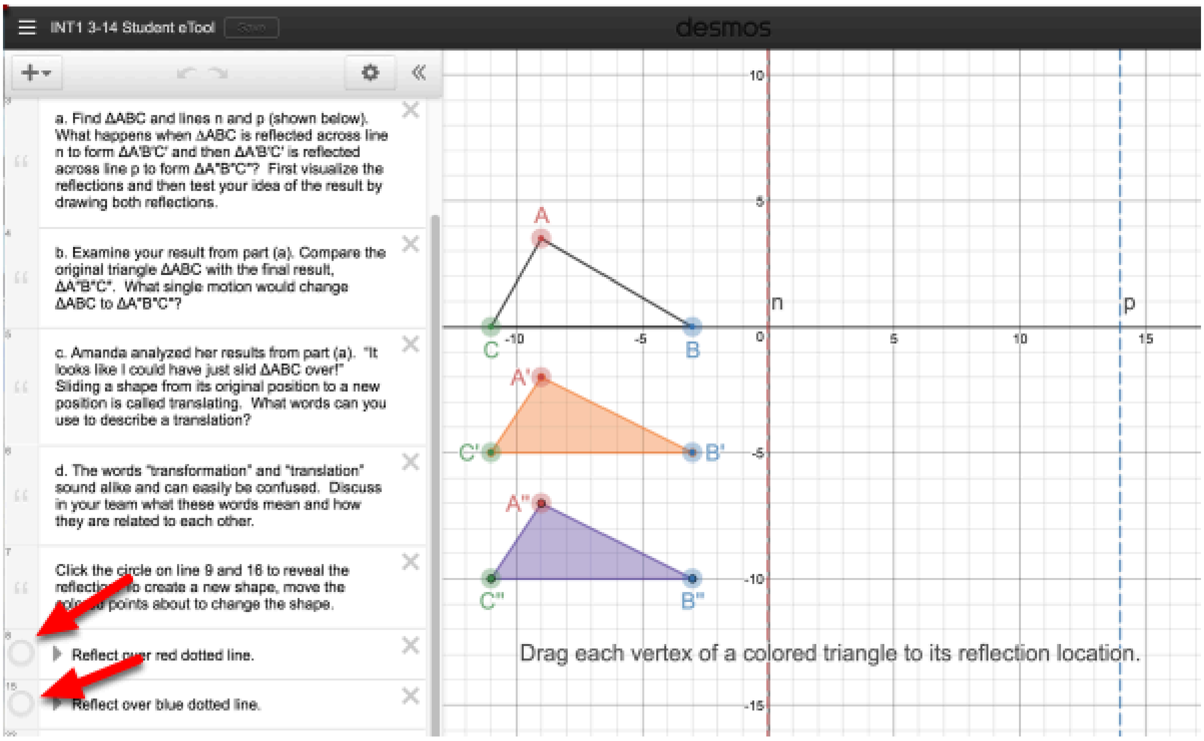
5. INT1 3-1d:

INT1 3.1.2: Transformations with 3-14 & 3-15a, c

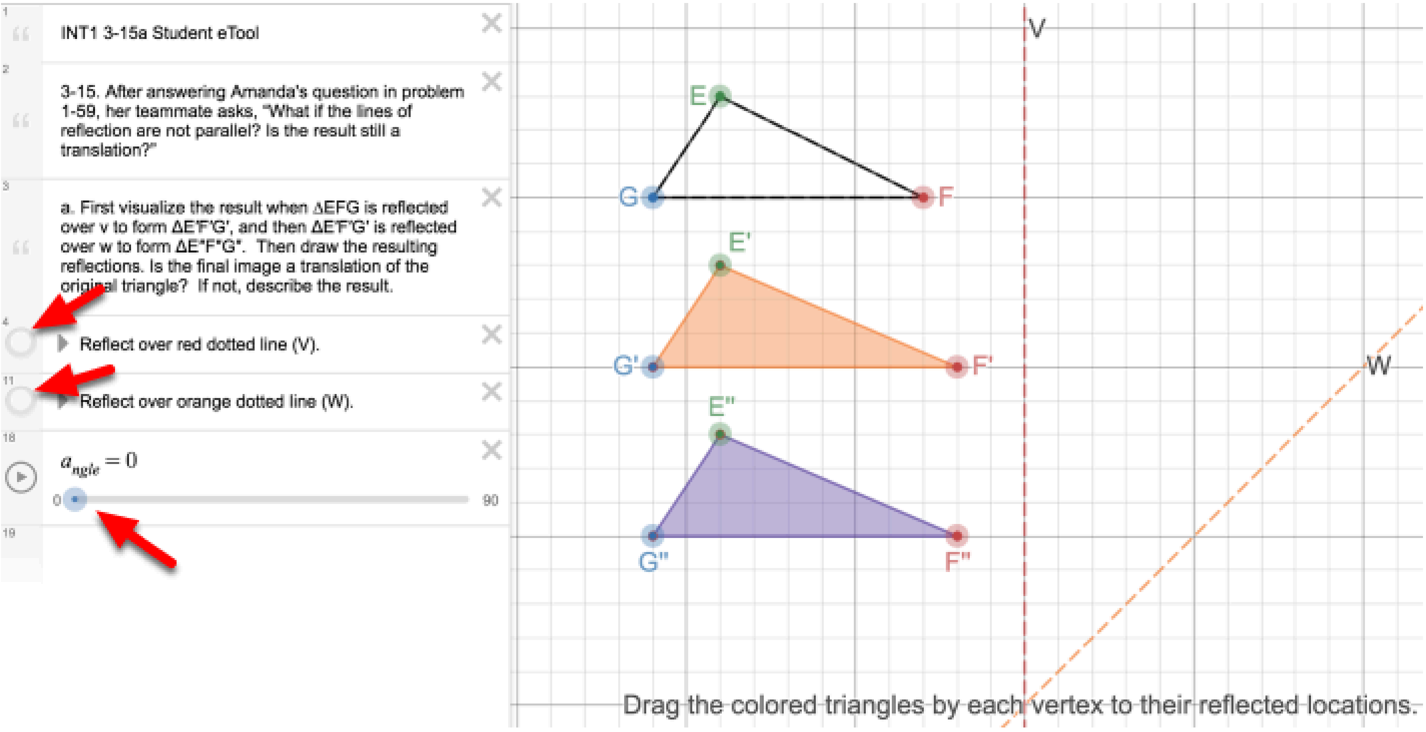
Click on the links below.

3-14 Student eTool (Desmos)
3-15a Student eTool (Desmos)
3-15e Student eTool (Desmos)

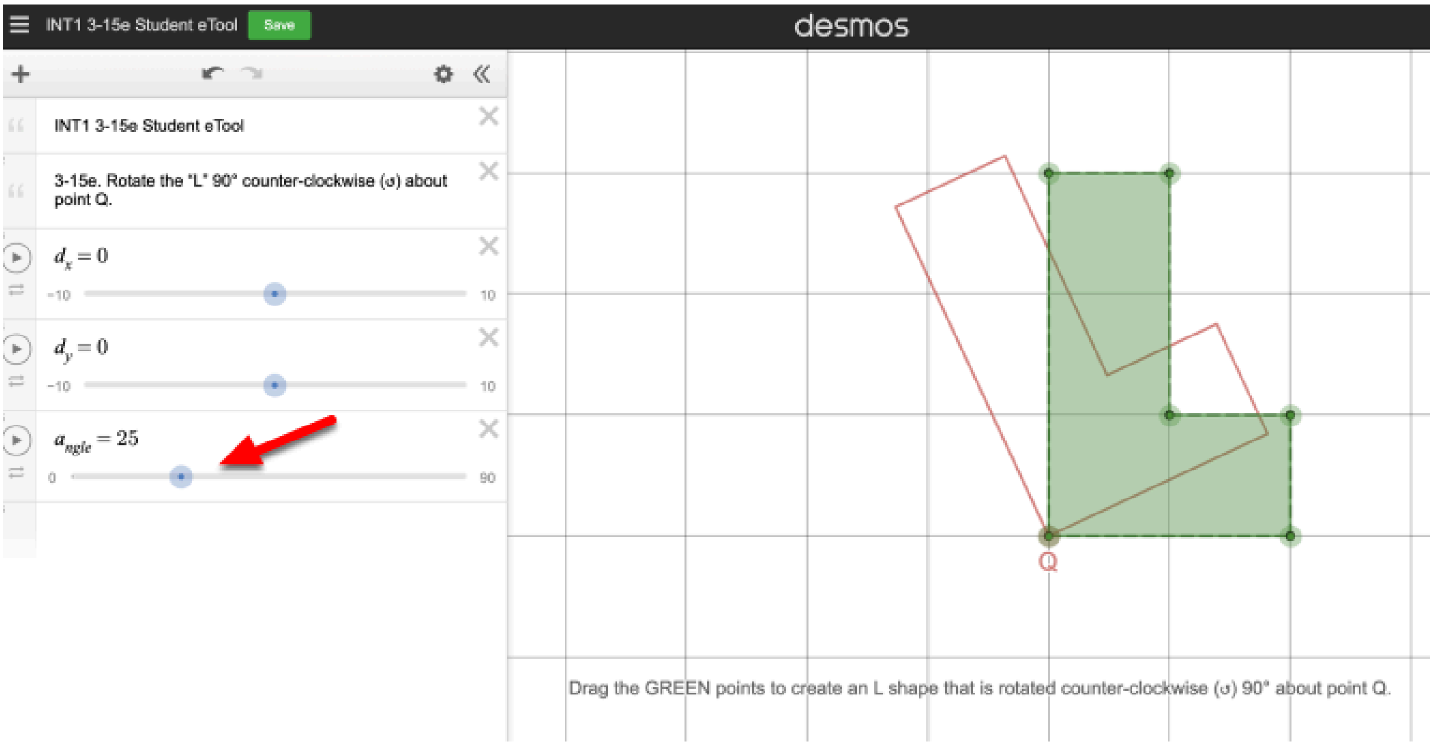
1. 3-14: Click the folder buttons to view.



2. 3-15a: Click the folder buttons to view the reflections. Drag the slider to view the rotation.



3. 3-15e: Drag the Angle Slider to view the rotation.

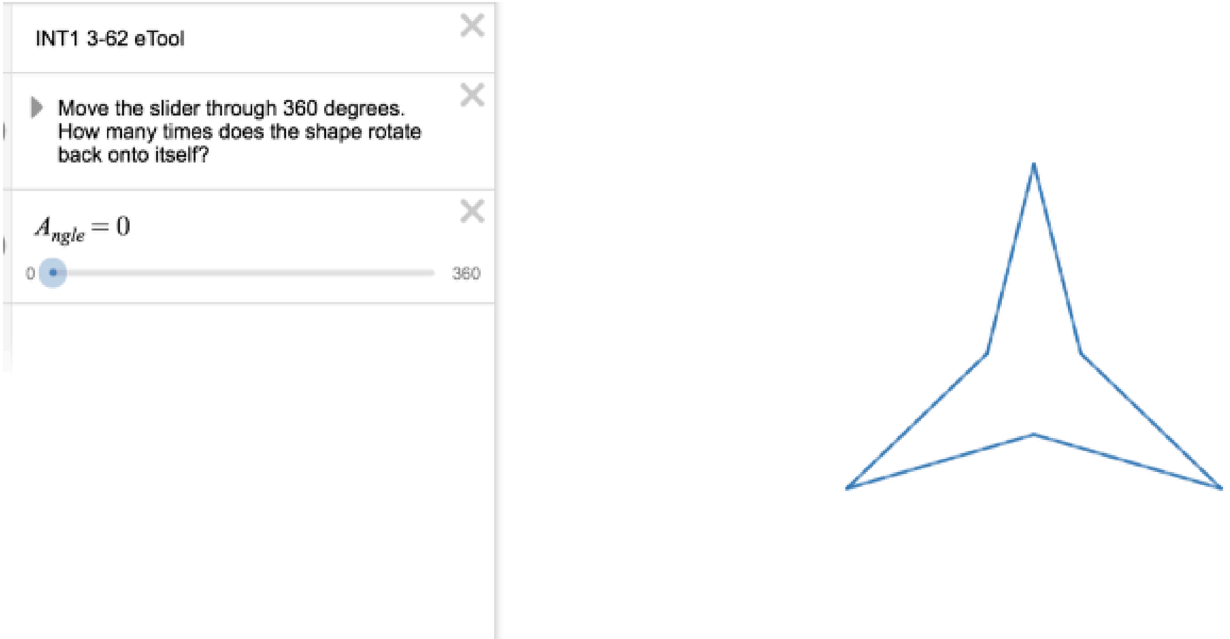


INT1 3.1.6: 3-62 eTool (Desmos)

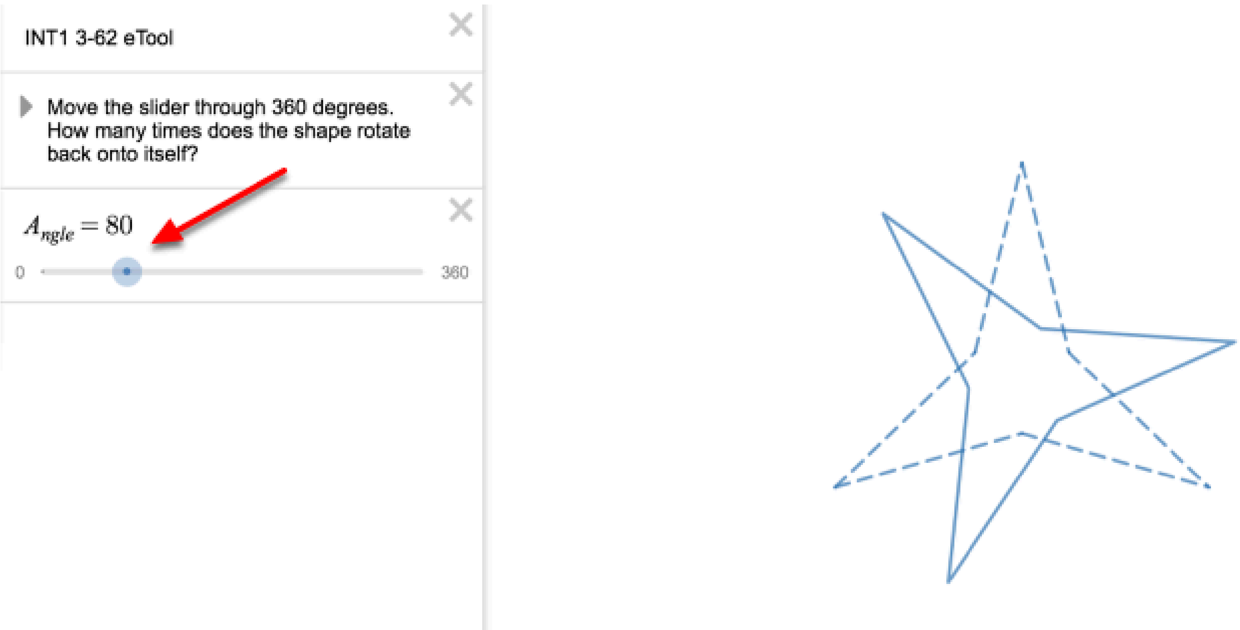
Click the link below.

3-62 Student eTool (Desmos)

INT1 3-62 eTool (Desmos)



Move the slider to rotate the figure.

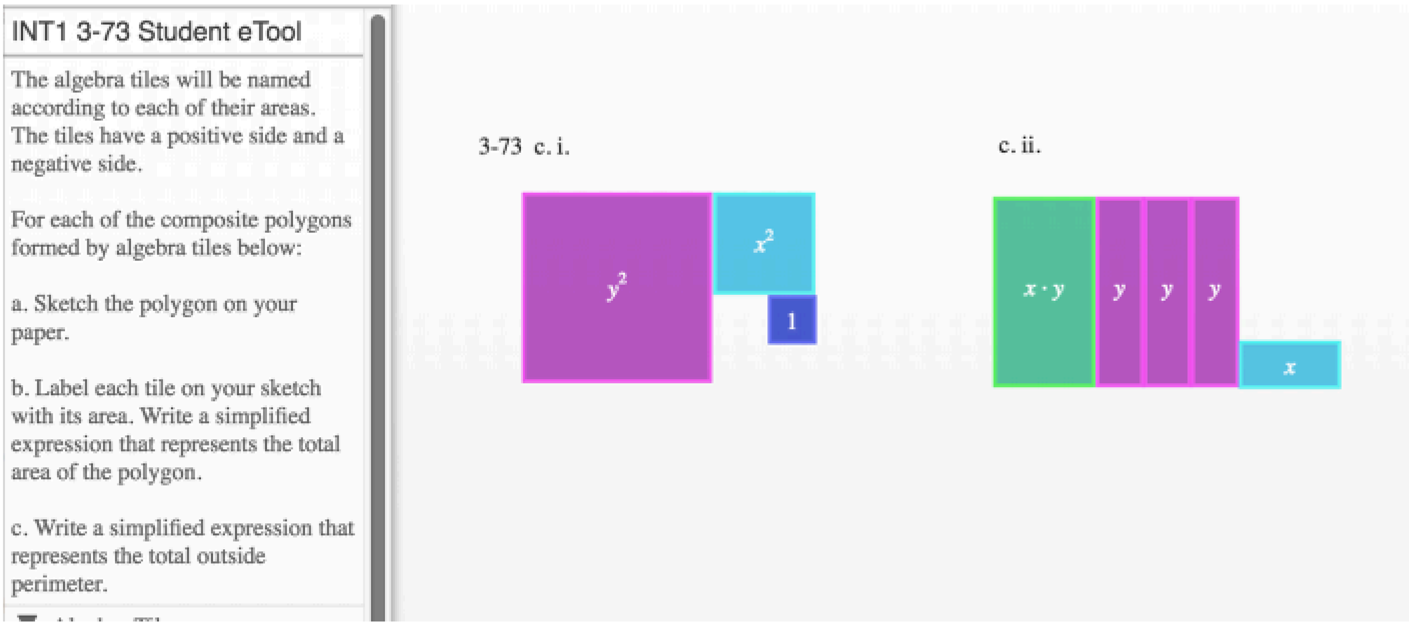


INT1 3.2.1: 3-73 Student eTool (CPM)

Click on the link below:

3-73 Student eTool (CPM)

INT1 3-74 Student eTool:

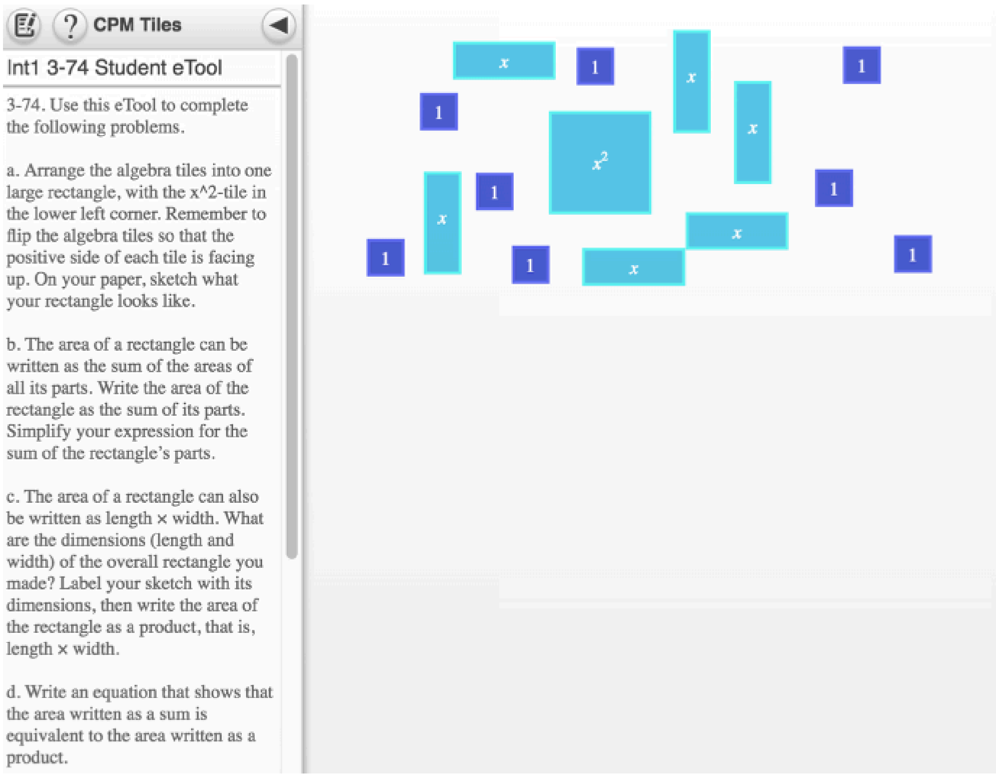


INT1 3.2.1: 3-74 Student eTool

Click on the link below.

[3-74 Student eTool (CPM)]

INT1 3-74 Student eTool:

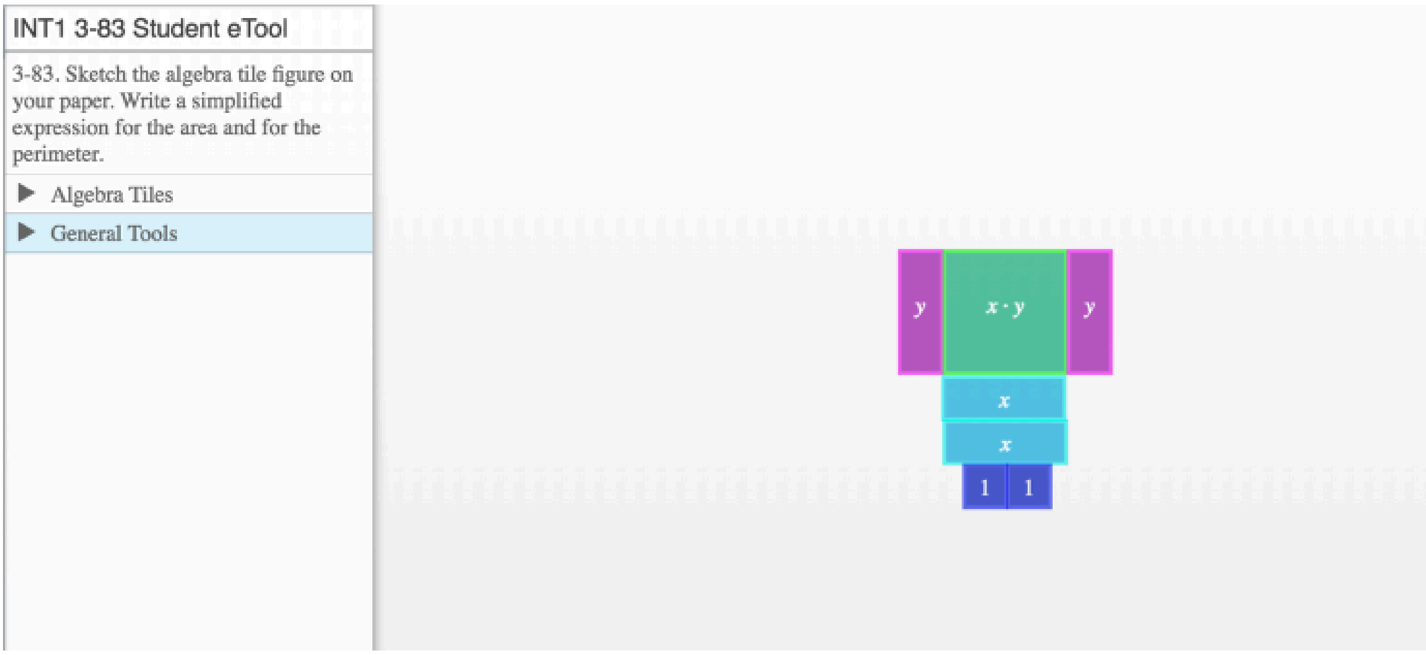


INT1 3.2.2: 3-83 Student eTool (CPM)

Click on the link below:

3-83 Student eTool (CPM)

INT1 3-83 Student eTool (CPM):



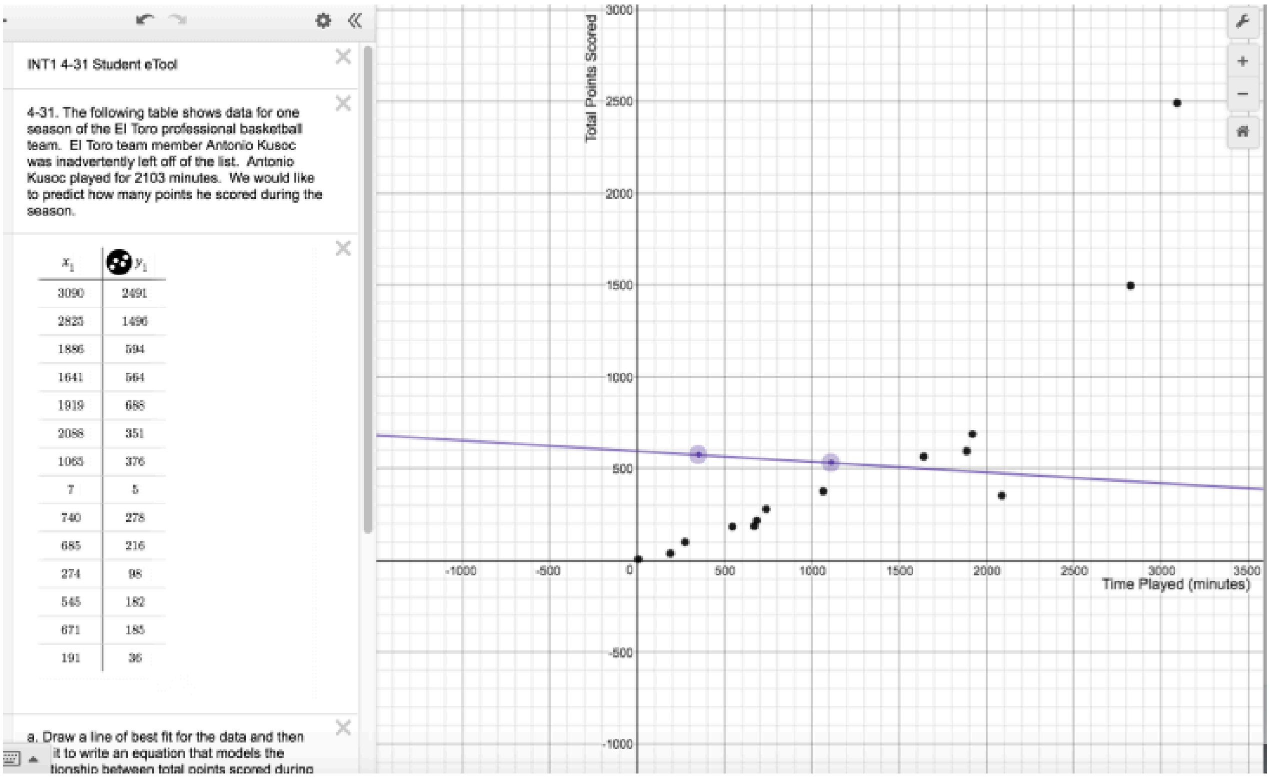
Chapter 4

Int1 4.1.4: 4-31 Student eTool (Desmos)

Click on the links below.

4-31 Student eTool (Desmos) (Desmos)

1. Int1 4-31 Student eTool (Desmos)

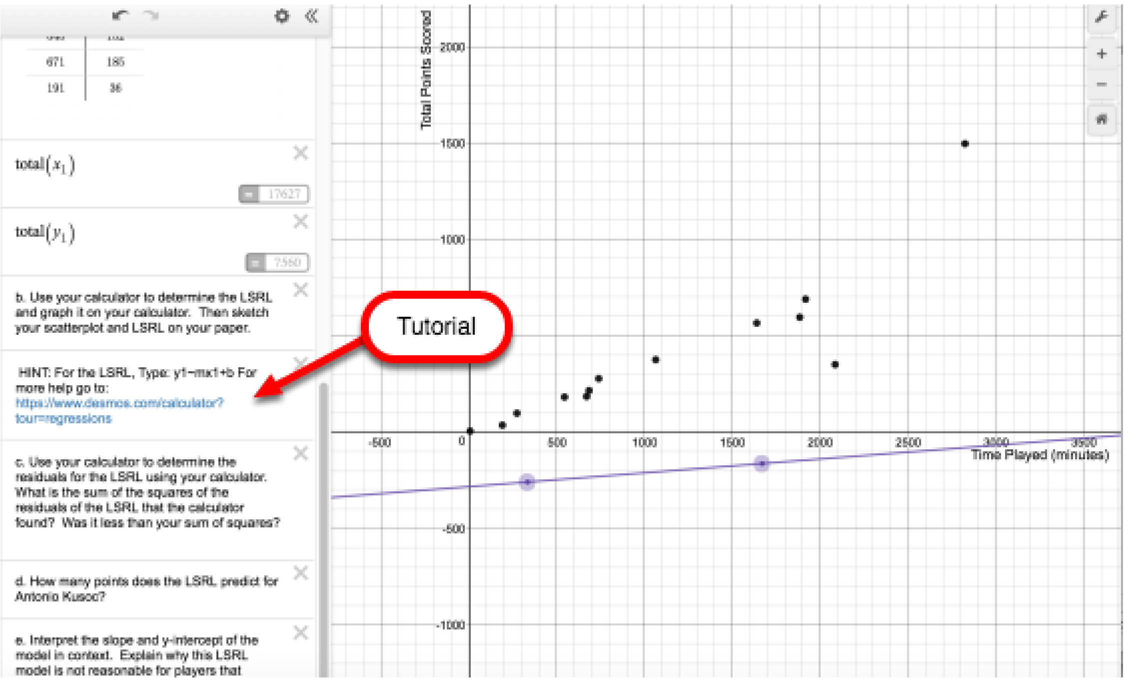


Int1 4.1.4: 4-34 Student eTool (Desmos)

Click on the links below.

[4-34 Student eTool (Desmos)]

1. 4-34 Student eTool (Desmos)



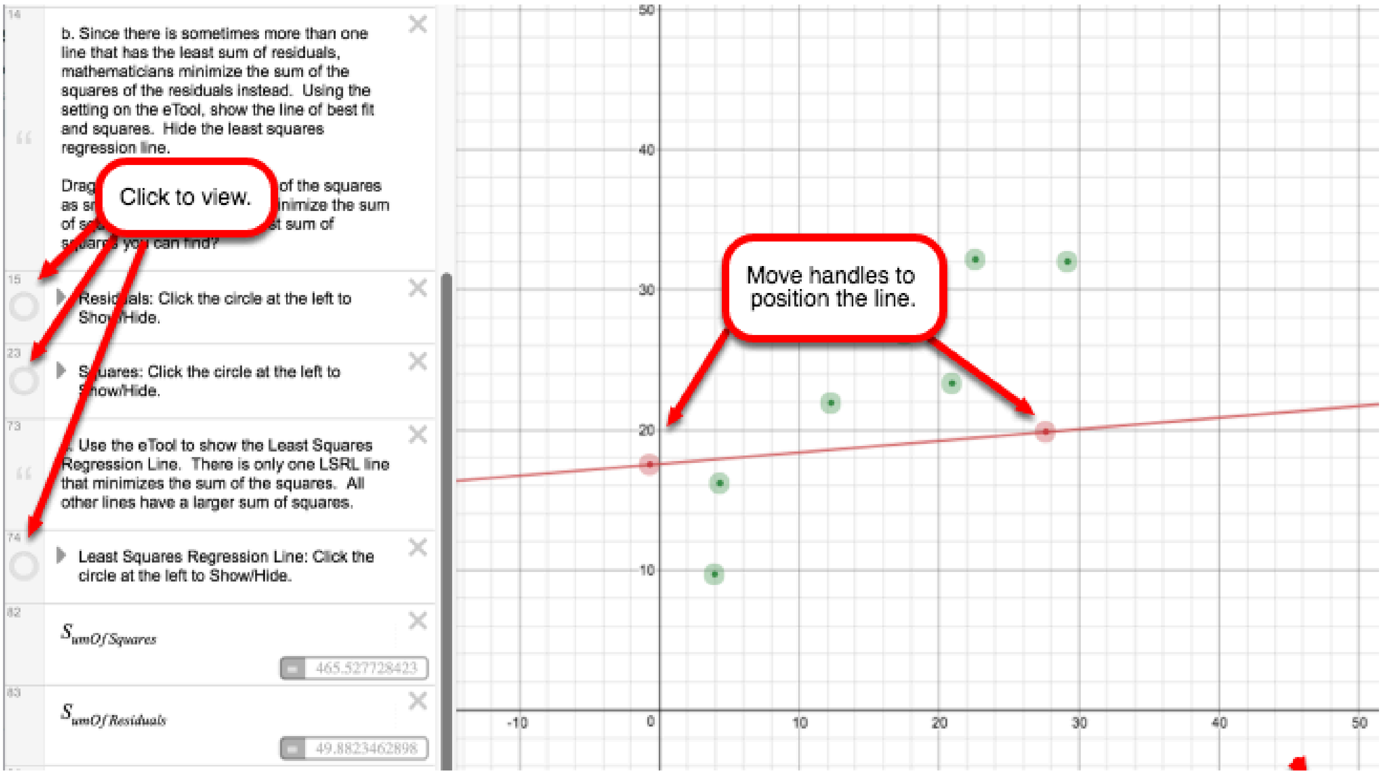
Int1 4.1.4: 4-35 Student eTool (Desmos)

Click on the links below.

4-35 Student eTool (Desmos)

1. 4-35 Least Squares Student eTool (Desmos)

- Use this etool to visually position a line of best fit.
- Click the circles to view the actual line of best fit.
- Click the circles to view the residuals and the square of the residuals.

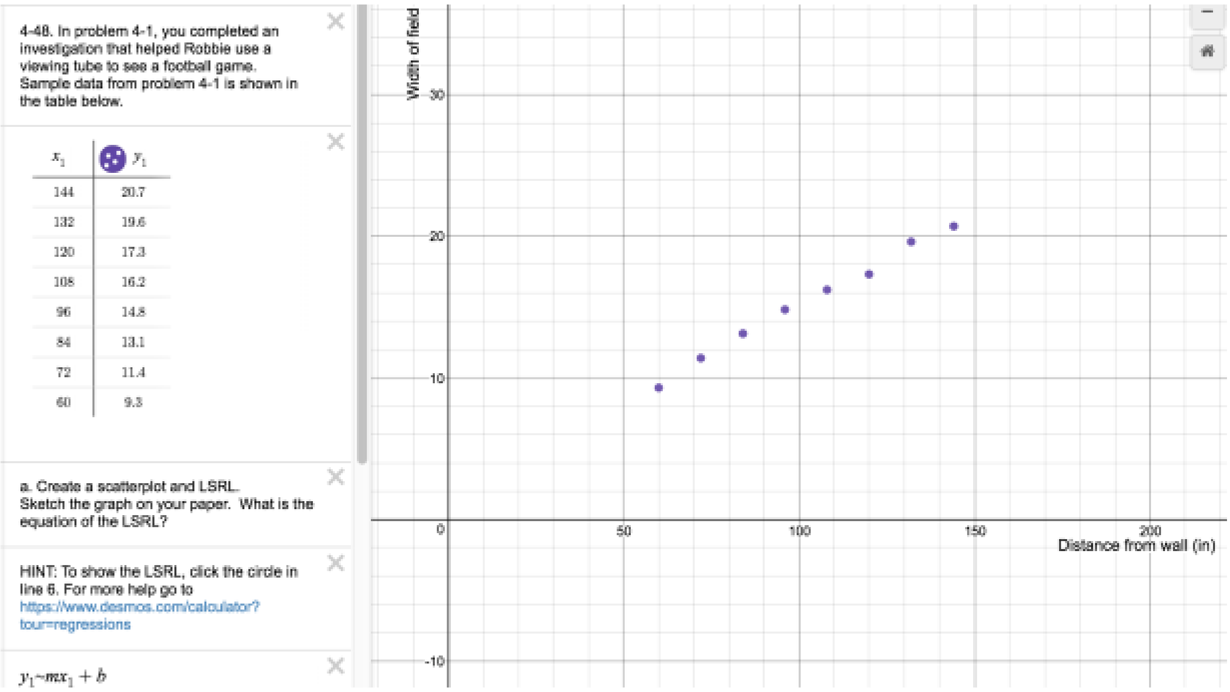


Int1 4.2.1: 4-48, 4-49, 4-51, 4-52, 4-52 Student eTools (Desmos) & 4-52 Random Point Generator (G-sheet)

Click on the links below.

4-48 Student eTool (Desmos)
4-49 Student eTool (Desmos)
4-51 Student eTool (Desmos)
4-52 Student eTool (Desmos)
4-54 Random Point Generator (Google Sheet)
4-54 Student eTool (Desmos)

Int1 4-48 Student eTool (Desmos):



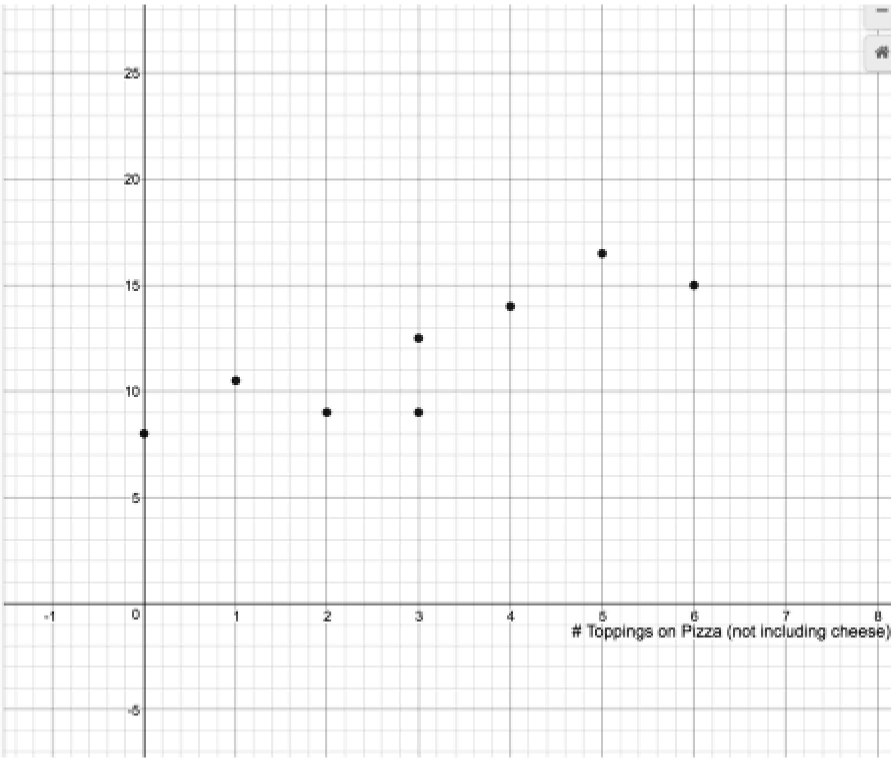
Int1 4-49 Student eTool (Desmos):

4-49. Giulia's father would like to open a restaurant, and is deciding how much to charge for the toppings on pizza. He sent Giulia to eight different restaurants around town to find out how much they each charge. Giulia returned with the following information:

x_1	y_1
1	10.50
3	9.00
4	14.00
6	15.00
3	12.50
5	16.50
0	8.00
2	9.00

a. Giulia needs to write a report for her father about what he should charge for a two-topping pizza. With your team discuss what elements a statistical analysis report should contain.

b. Write the report you described in part (a), and predict what Giulia's father should charge for a two-topping pizza.



Int1 4-51 Student eTool (Desmos)

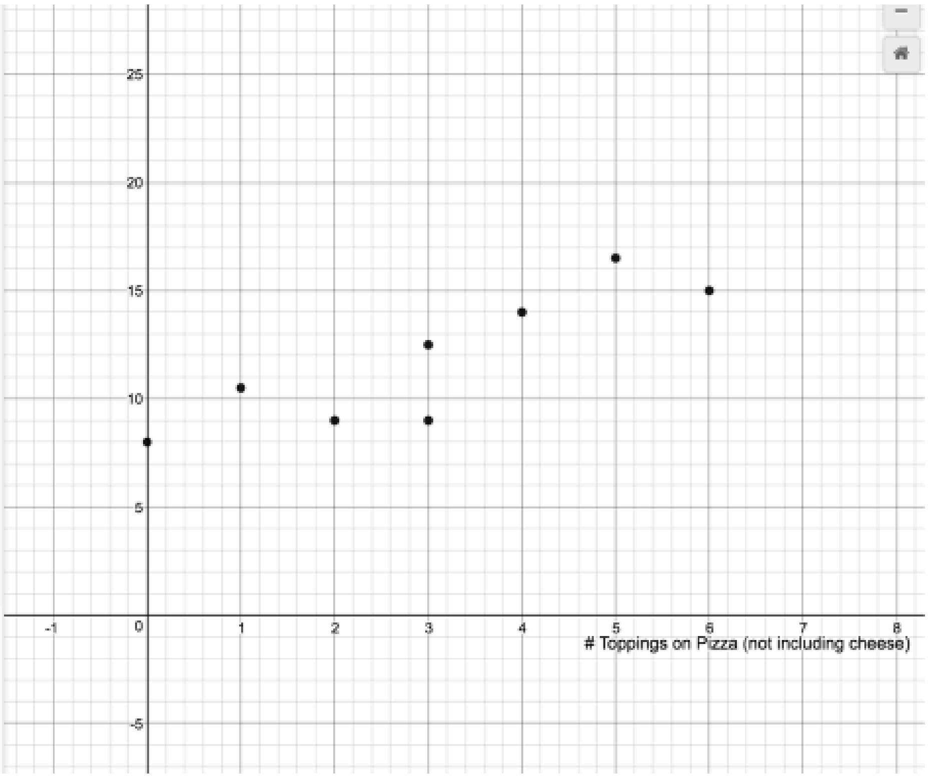
4-51. Help Giulia analyze the residuals for the pizza parlors in problem 4-49 as described below.

x_1	y_1
1	10.50
3	9.00
4	14.00
6	15.00
3	12.50
5	16.50
0	8.00
2	9.00

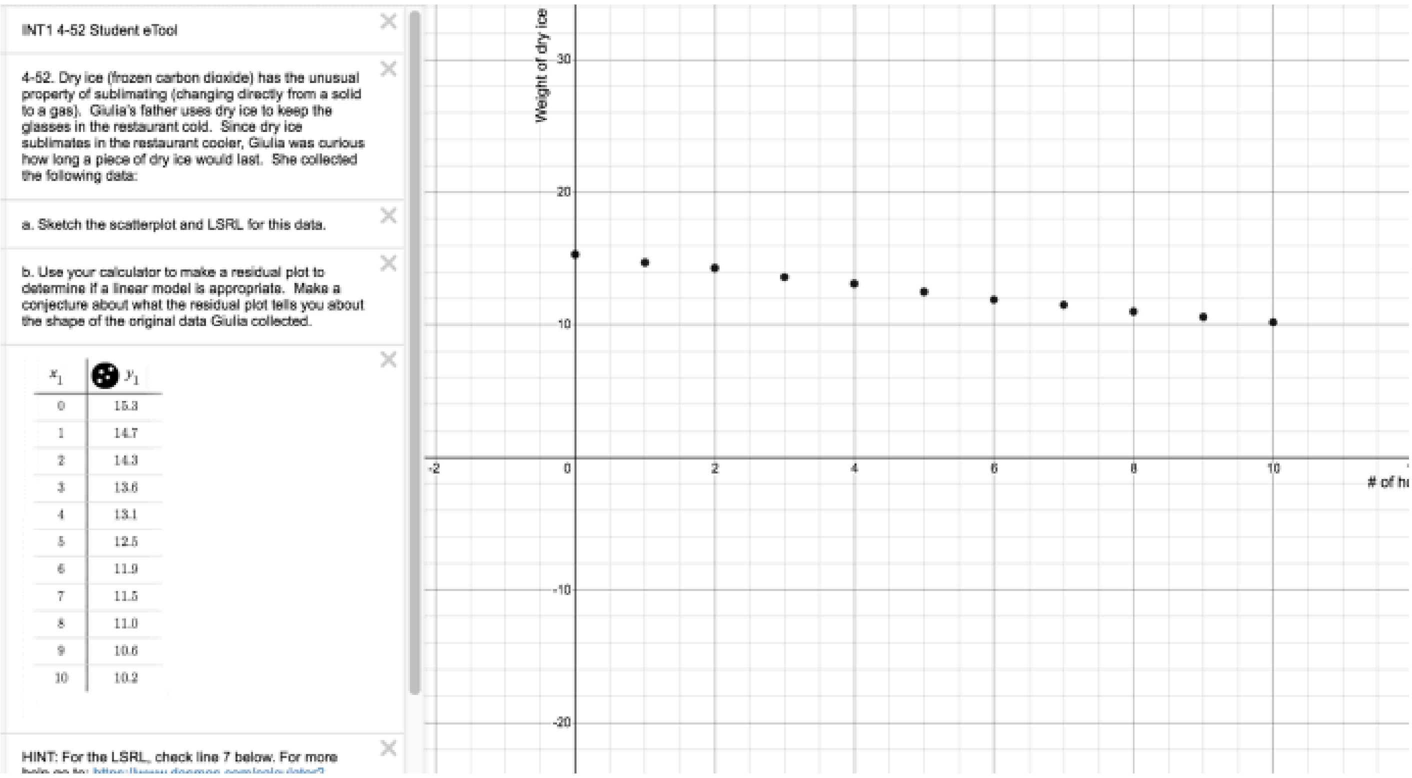
a. Mark the residuals on the scatterplot you created in problem 4-49. If you want to purchase an inexpensive pizza, should you go to a store with a positive or negative residual?

b. What is the sum of the residuals? Are you surprised at this result?

c. Make a residual plot using your calculator, with the x-axis representing the number of pizza toppings, and the y-axis representing the residuals. Interpret the scatter of the points on the residual plot. Is a linear model

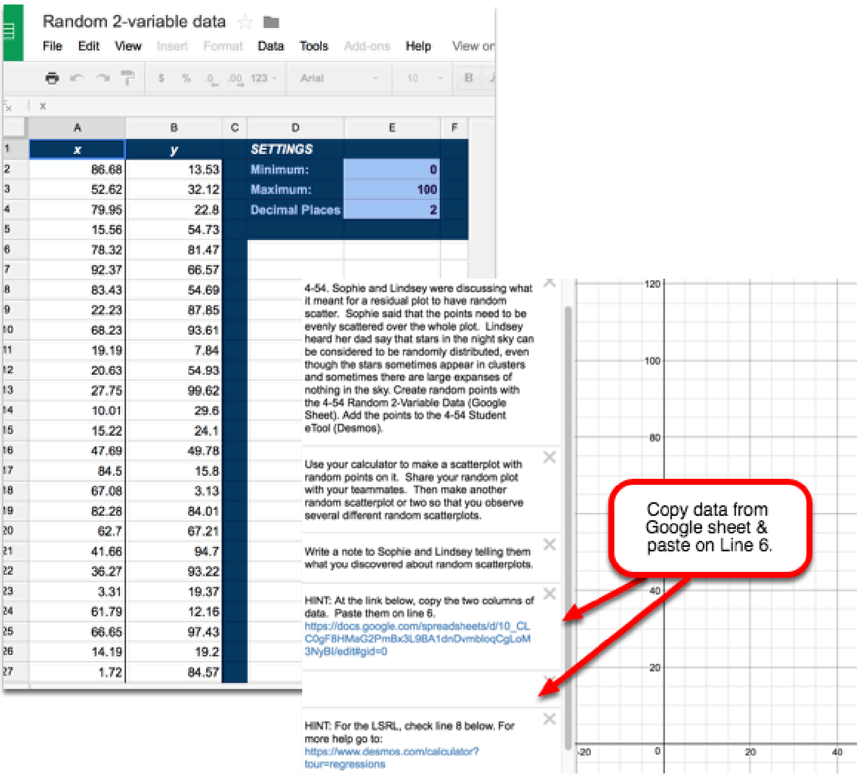


Int1 4-52 Student eTool (Desmos):



Random Point Generator & Int1 4-54 Student eTool (Desmos):

- Duplicate the Google Sheet for your personal use!
- Modify the settings.
- Press refresh to obtain new random numbers.
- Copy and Paste both columns into the 4-54 Student eTool (Desmos).
- A table of values will be created and the data plotted on the graph.
- Press the wrench on the upper right corner to set the Range and Domain for the graph.

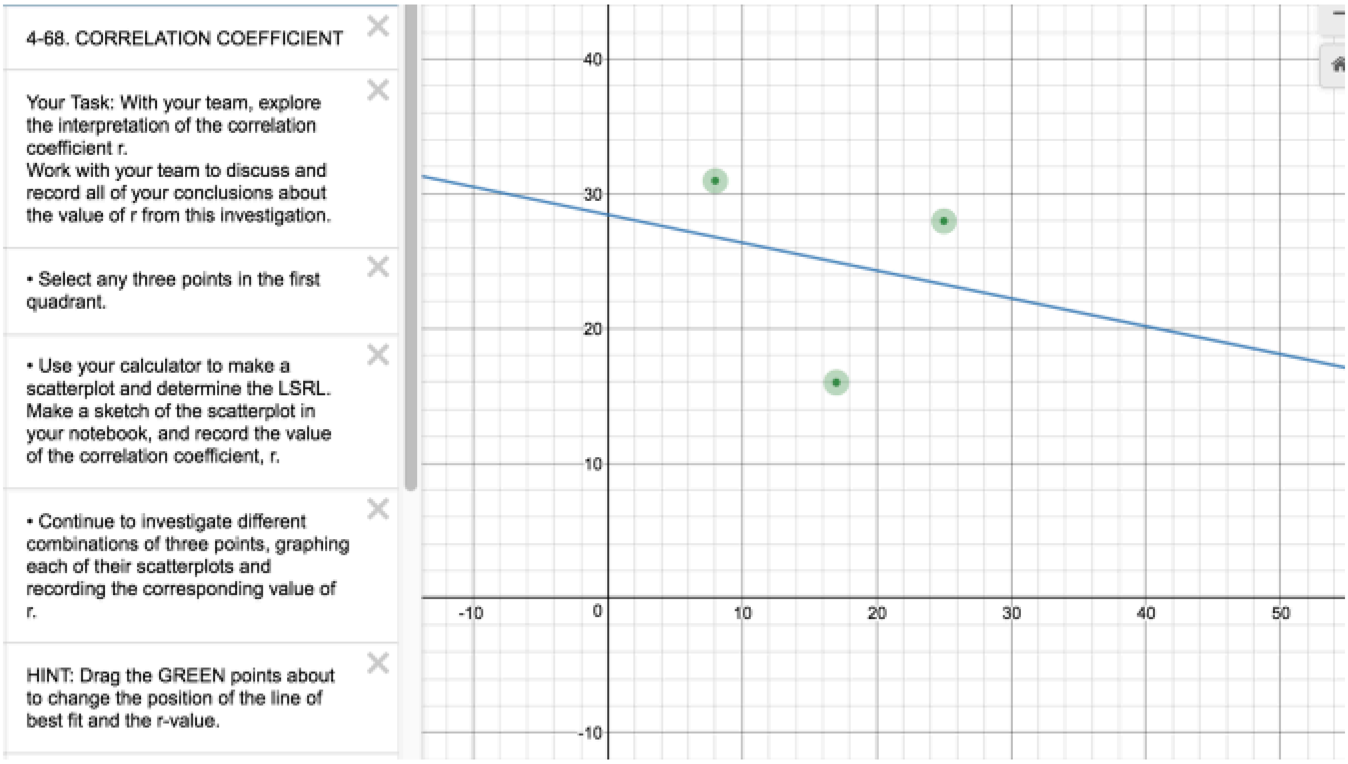

Random 2-variable data
File Edit View Insert Format Data Tools Add-ons Help
SETTINGS
Minimum: 0
Maximum: 100
Decimal Places 2
4-54. Sophie and Lindsey were discussing what it meant for a residual plot to have random scatter. Sophie said that the points need to be evenly scattered over the whole plot. Lindsey heard her dad say that stars in the night sky can be considered to be randomly distributed, even though the stars sometimes appear in clusters and sometimes there are large expanses of nothing in the sky. Create random points with the 4-54 Random 2-Variable Data (Google Sheet). Add the points to the 4-54 Student eTool (Desmos).
Use your calculator to make a scatterplot with random points on it. Share your random plot with your teammates. Then make another random scatterplot or two so that you observe several different random scatterplots.
Write a note to Sophie and Lindsey telling them what you discovered about random scatterplots.
HINT: At the link below, copy the two columns of data. Paste them on line 6.
https://docs.google.com/spreadsheets/d/10_CLC0gF8HMaG2PmBx3L9BA1dnDvmbloqCgLoM3NyBl/edit#gid=0
HINT: For the LSRL, check line 8 below. For more help go to:
https://www.desmos.com/calculator?tour=regressions
Copy data from Google sheet & paste on Line 6.

Int1 4.2.2: 4-68 Student eTool (Desmos) & 4-73 Student eTool (Desmos)

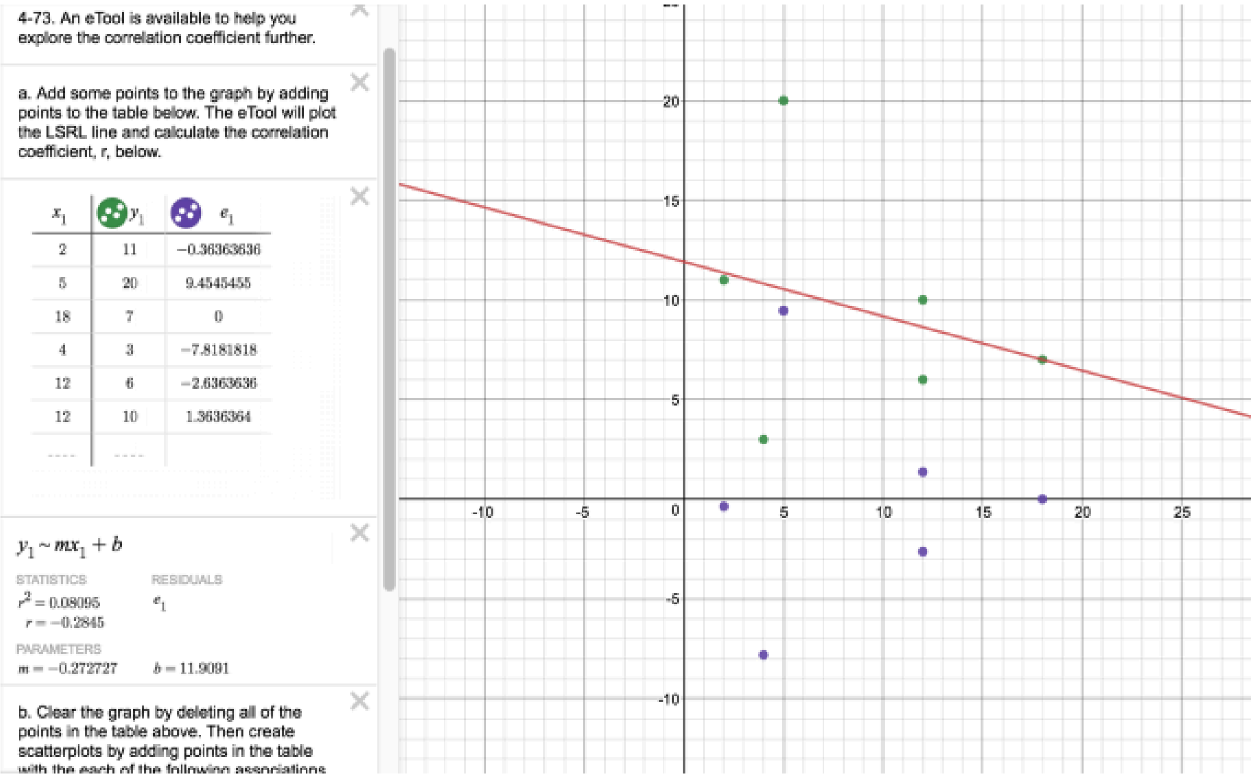
Click the links below:

4-68 Student eTool (Desmos)
4-73 Student eTool (Desmos)

Int 4-68 Student eTool (Desmos):



Int 4-73 Student eTool (Desmos):

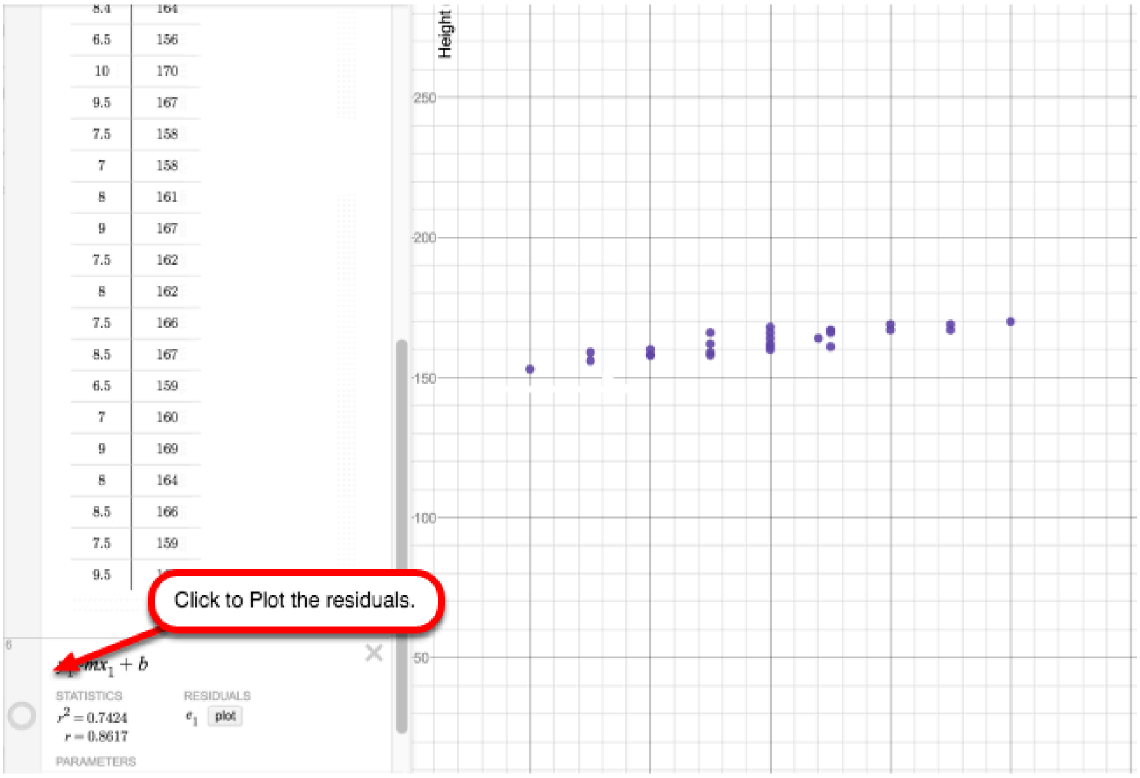


Int1 4.2.4: 4-92, 4-93, 4-49 Student eTools (Desmos)

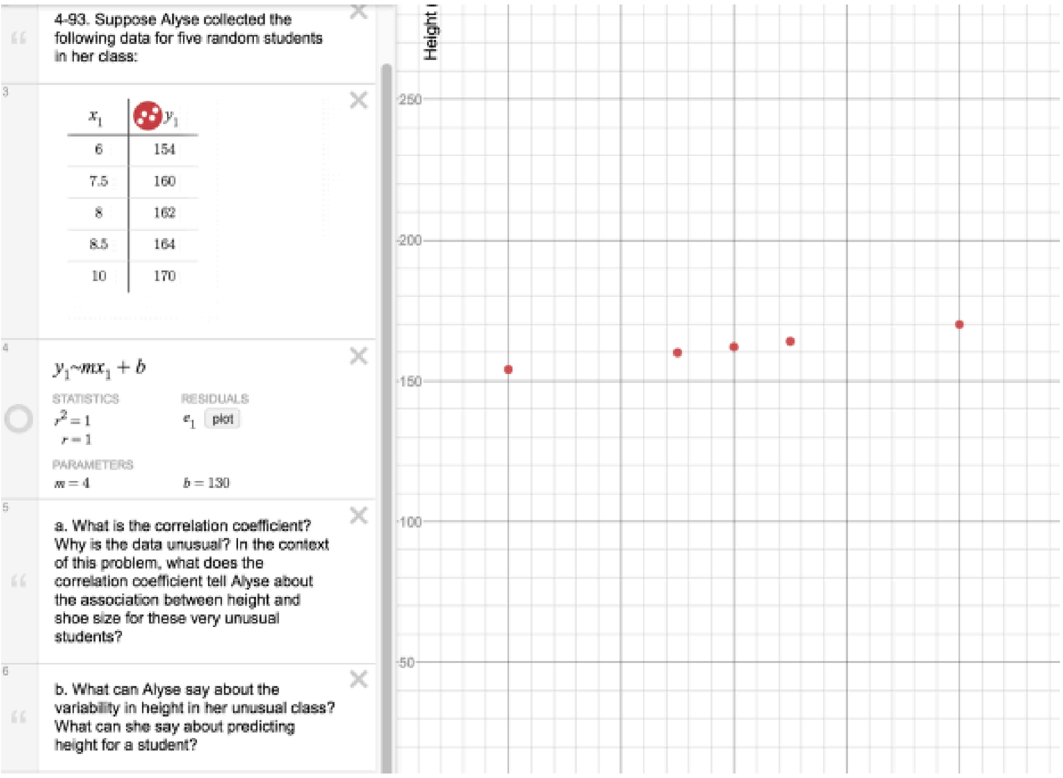
Click on the links below

4-92 Student eTool (Desmos)
4-93 Student eTool (Desmos)
4-95 Student eTool (Desmos)

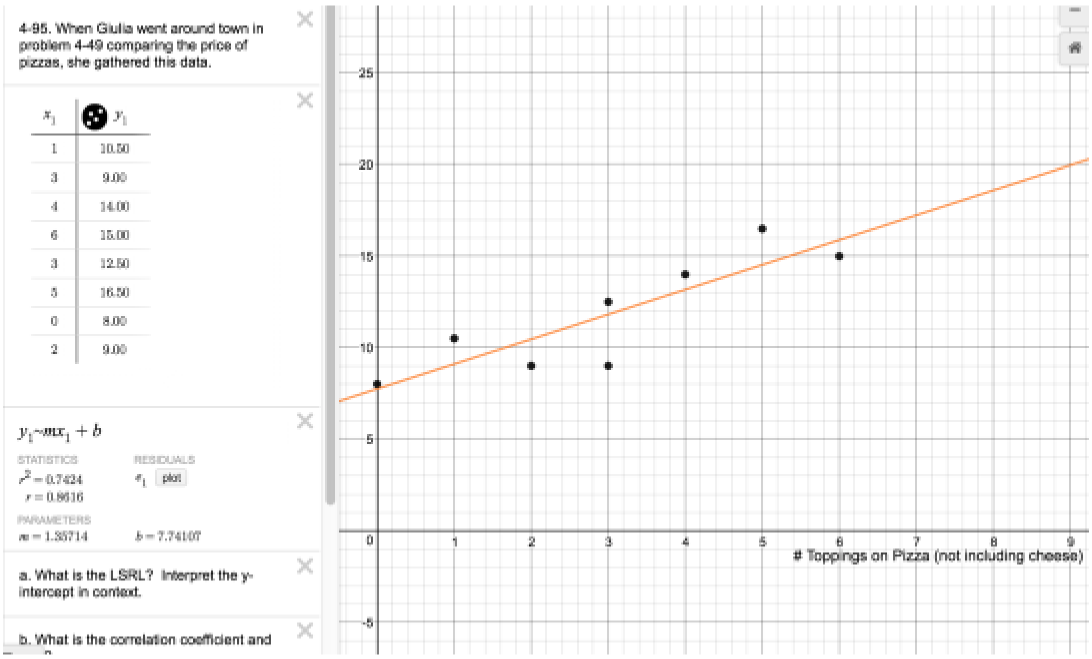
Int1 4-92 Student eTool:



Int1 4-93 Student eTool:



Int1 4-95 Student eTool:



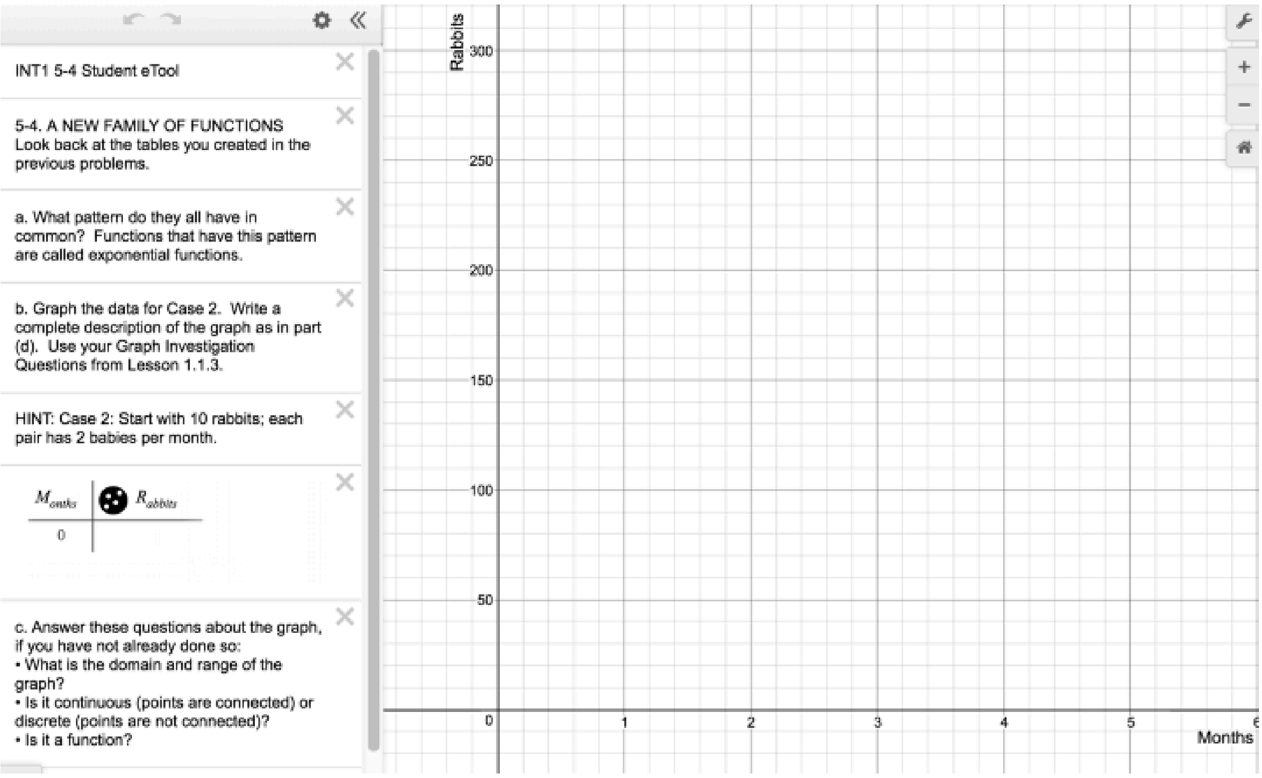
Chapter 5

INT1 5.1.1: 5-4 Student eTool (Desmos)

Click on the link below.

[5-4 Student eTool (Desmos)]

Int1 5-4 Student eTool (Desmos)

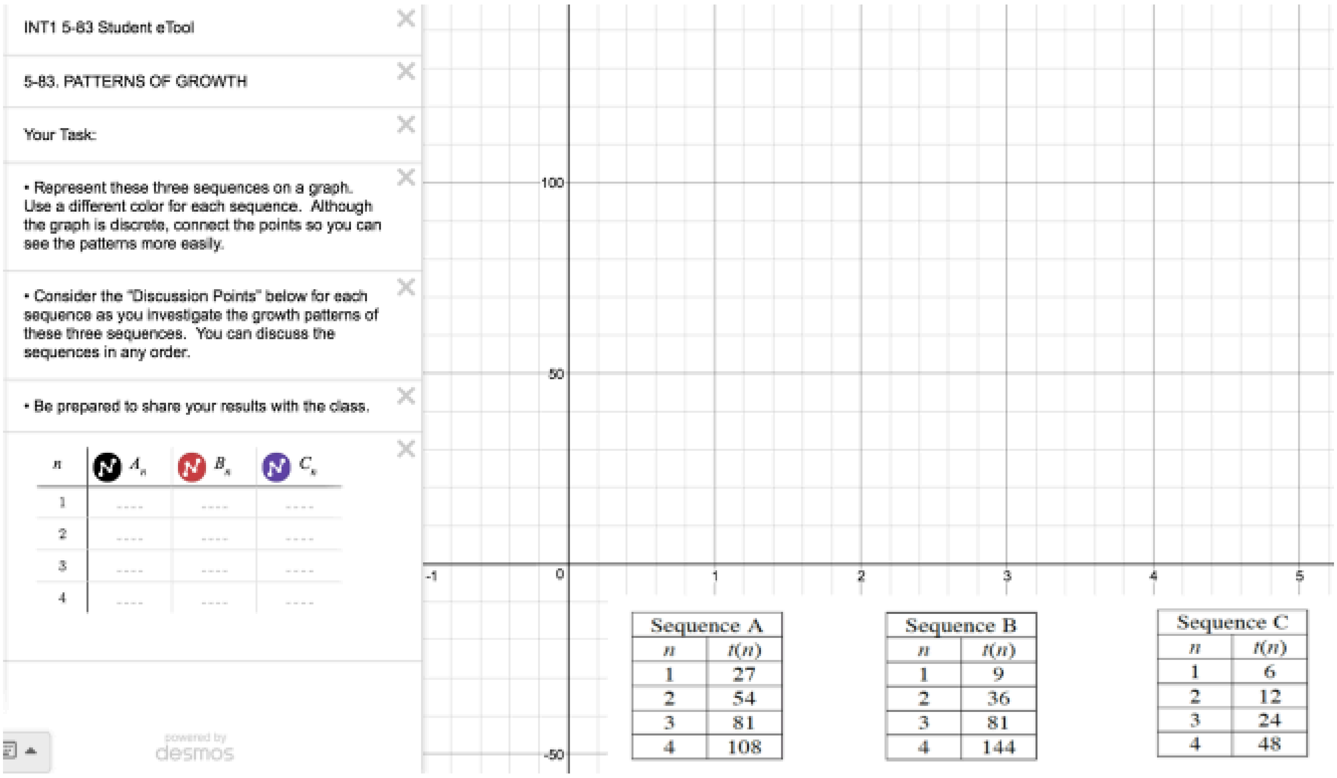


INT1 5.3.1: 5-83 Student eTool (Desmos)

Click on the link below.

5-83 Student eTool (Desmos)

INT1 5-83 Student eTool (Desmos)

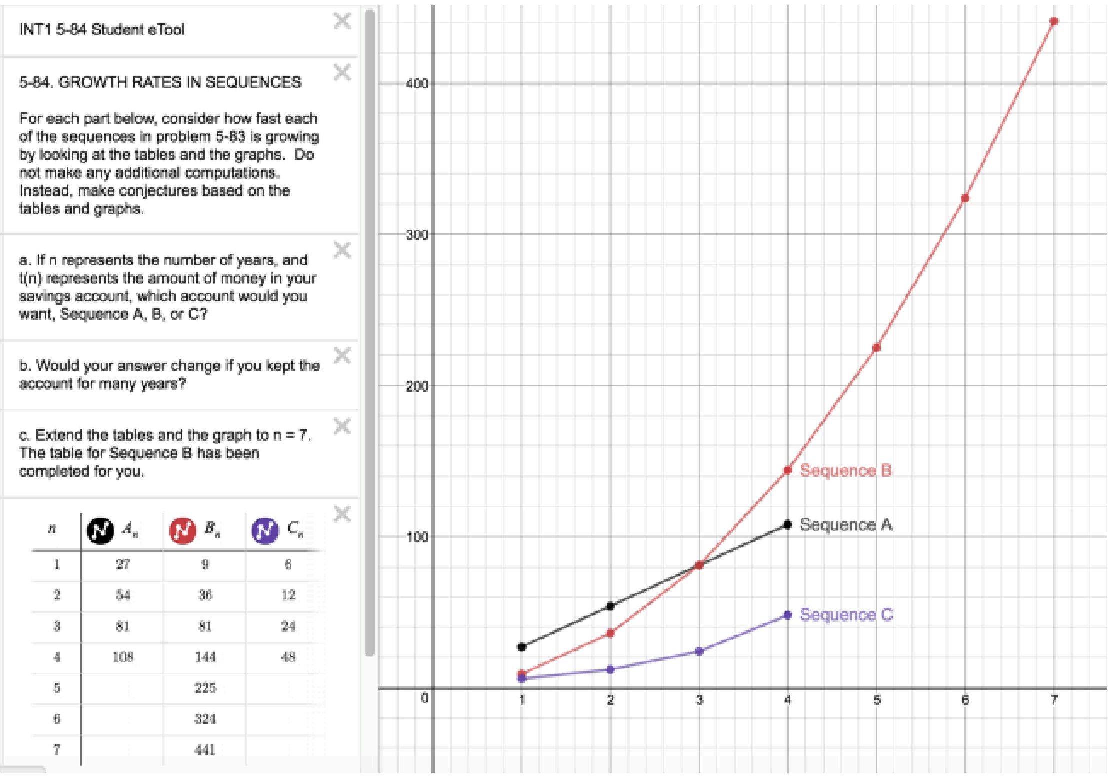


INT1 5.3.1: 5-84 Student eTool (Desmos)

Click on the link below.

5-84 Student eTool (Desmos)

INT1 5-84 Student eTool (Desmos)



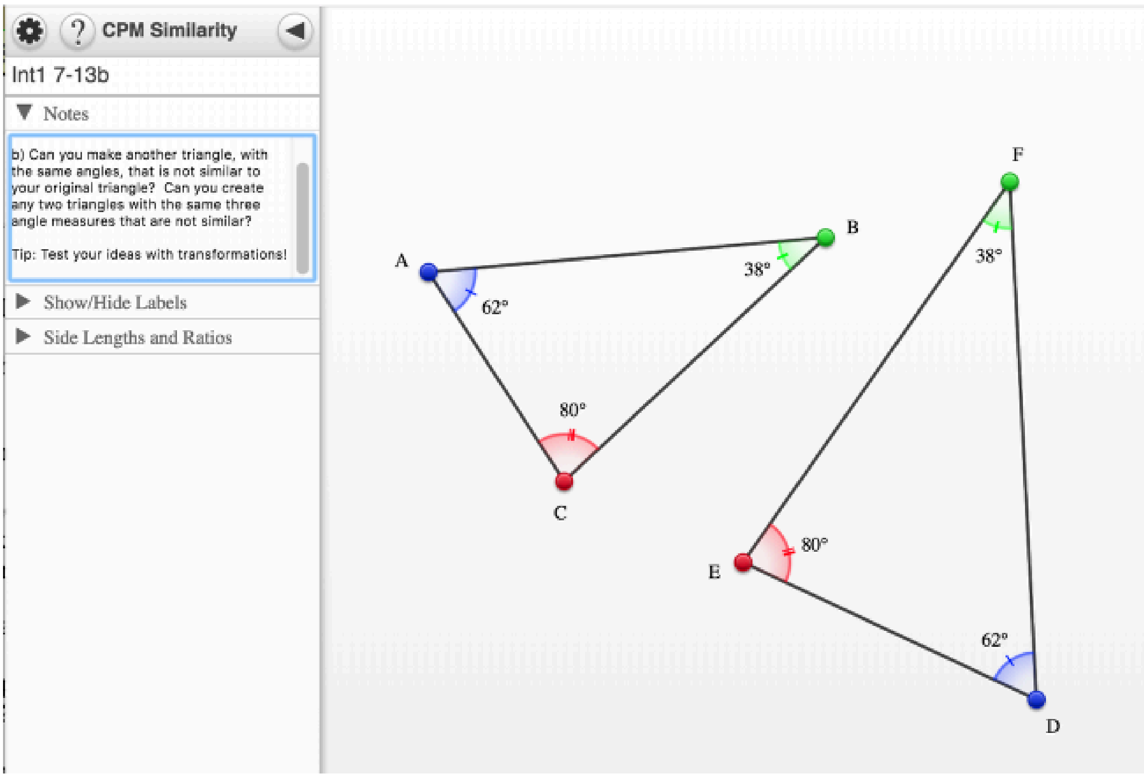
Chapter 7

INT1 7.1.2: 7-13b Student eTool (CPM)

Click on the link below to access eTool.

7-13b Student eTool (CPM)

Use the eTool to solve part (b) of problem 7-13.

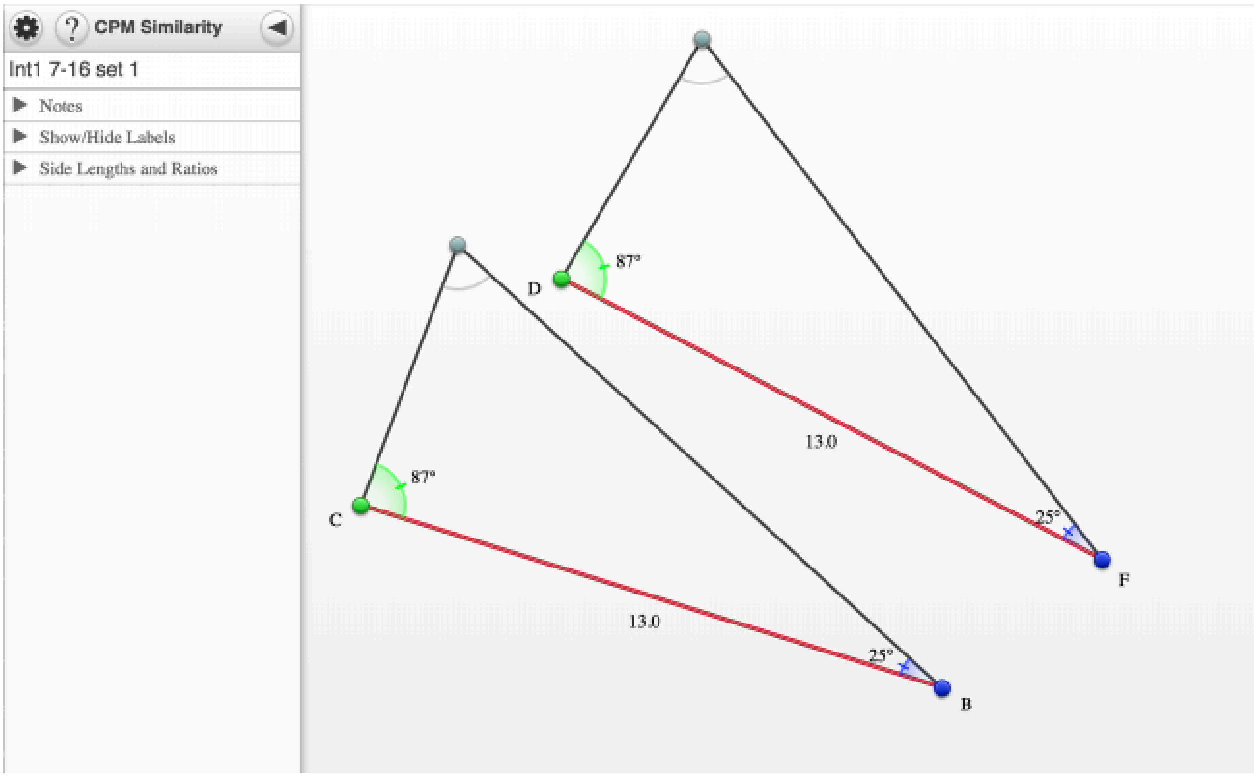


INT1 7.1.2: 7-16 Student eTools (CPM)

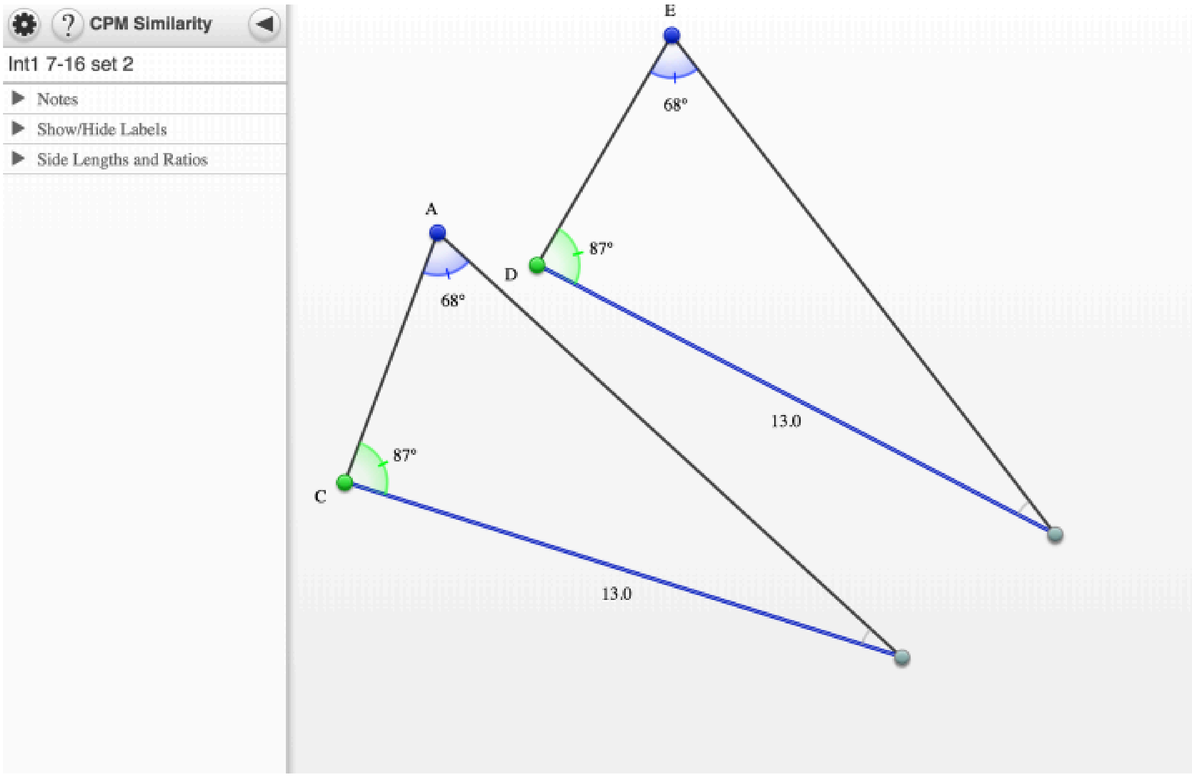
Click on the links below to access eTools.

[7-16 set 1 Student eTool (CPM)]
[7-16 set 2 Student eTool (CPM)]
For more information on Similarity eTools, view Similarity Toolkit (CPM).

INT1 7-16 set 1 Student eTool (CPM):



INT1 7-16 set 2 Student eTool (CPM):



INT1 7.1.5: 7-52, 7-53, 7-54, 7-56 & 7-57 Student eTools (CPM)

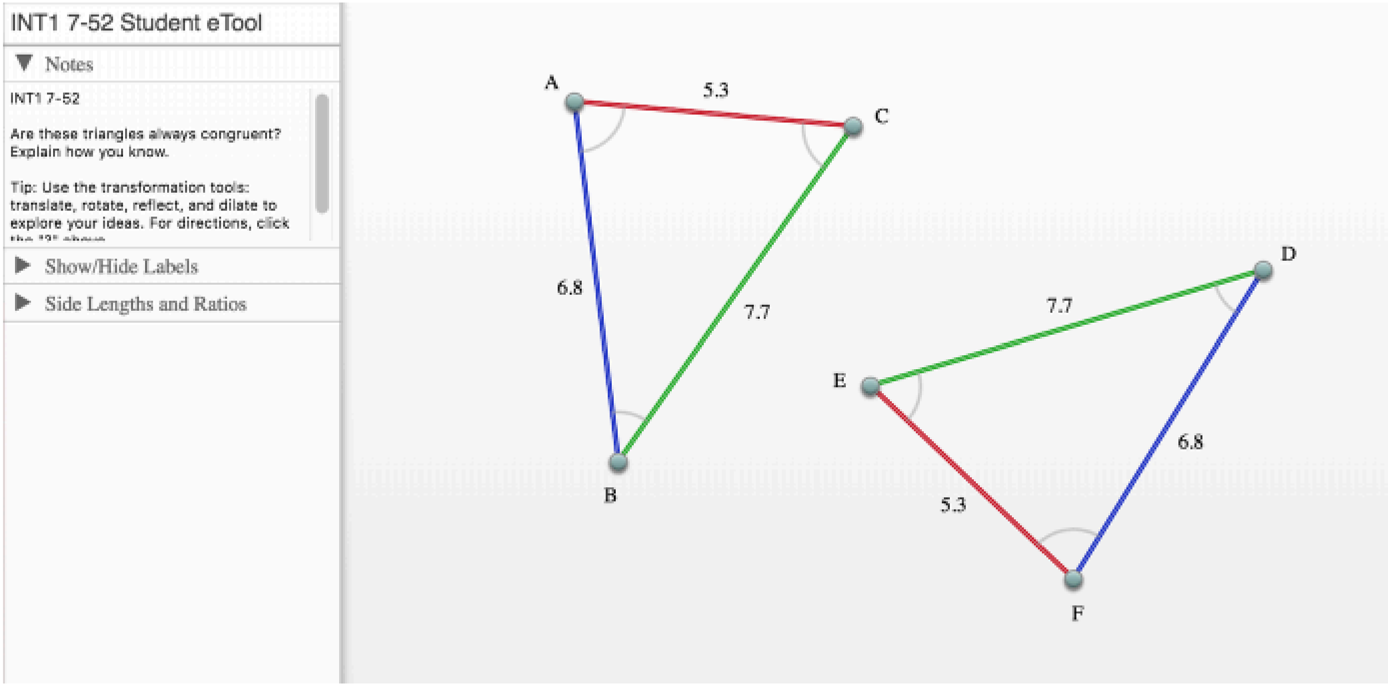
Click on the links below to access eTools.

7-52 Student eTool (CPM) 7-53 Student eTool (CPM) 7-54 Student eTool (CPM) 7-56 Student eTool (CPM) 7-57 Student eTool (CPM)

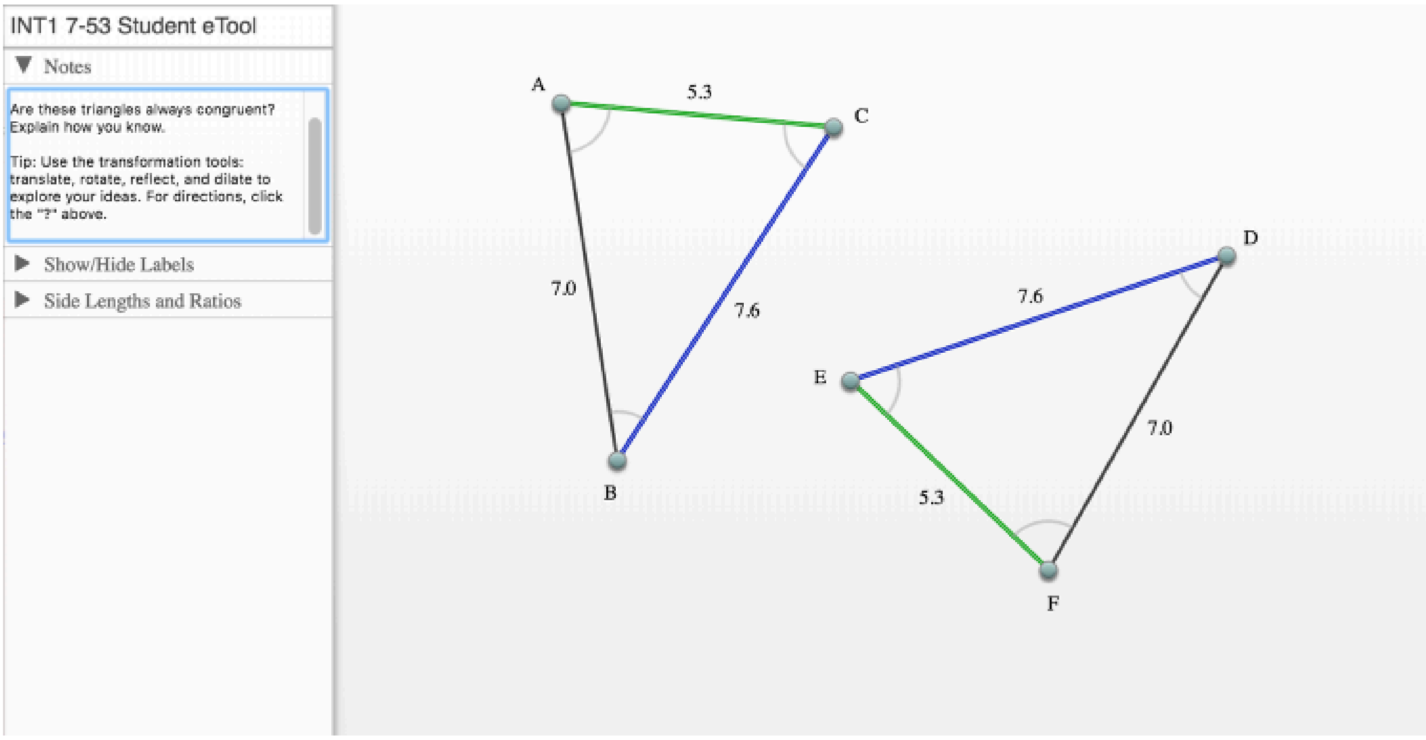
Use these eTools investigate what conditions are necessary to determine if triangles are similar.

For more information on Similarity eTools, view Similarity Toolkit (CPM).

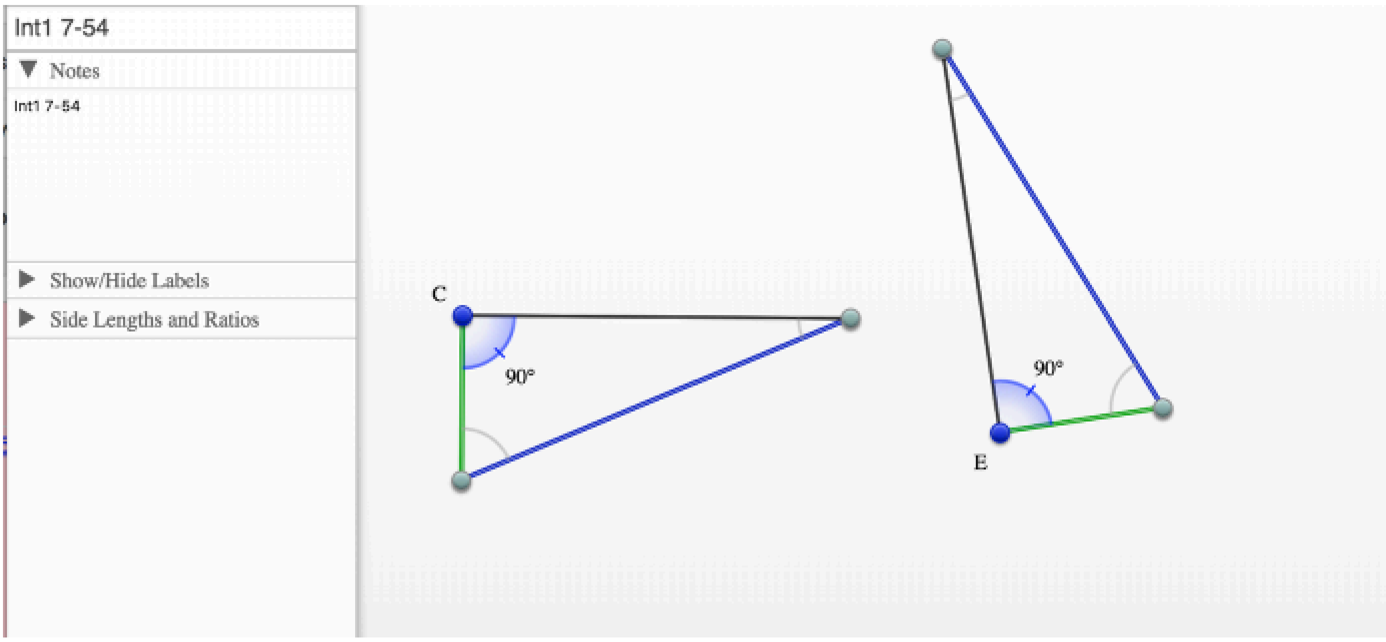
INT1 7-52 Student eTool (CPM):



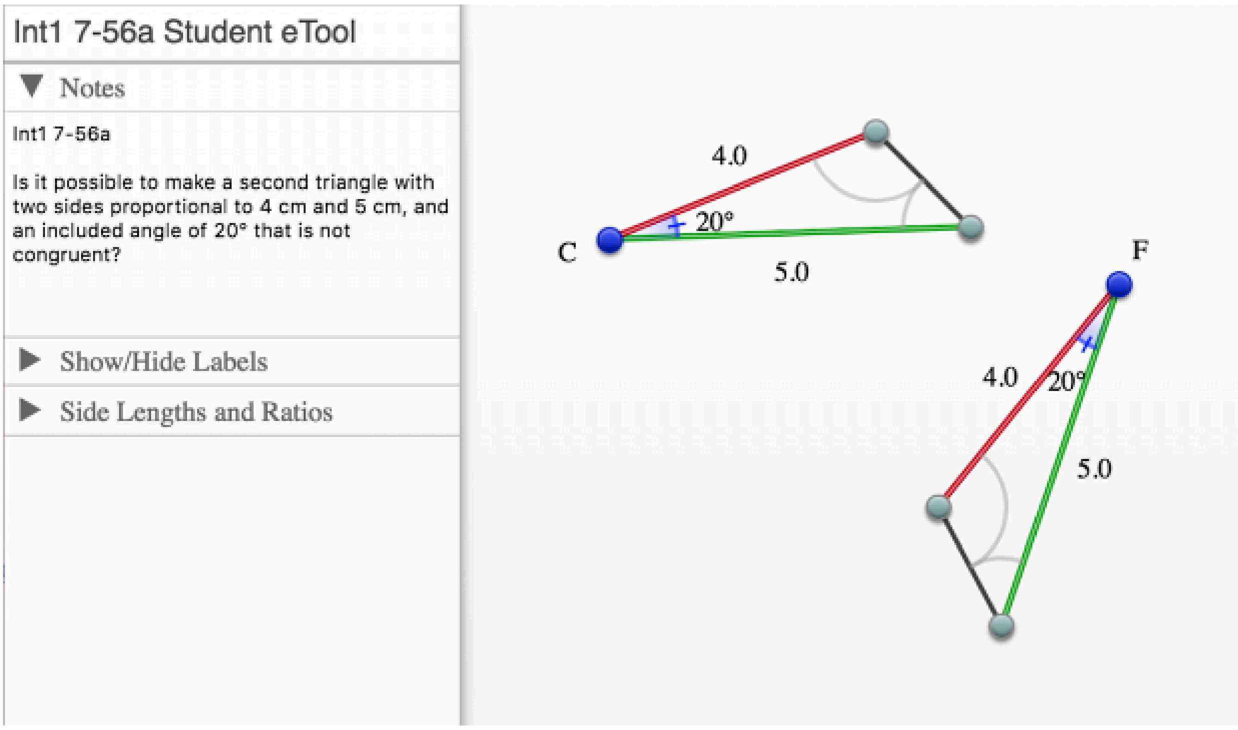
INT1 7-53 Student eTool (CPM):



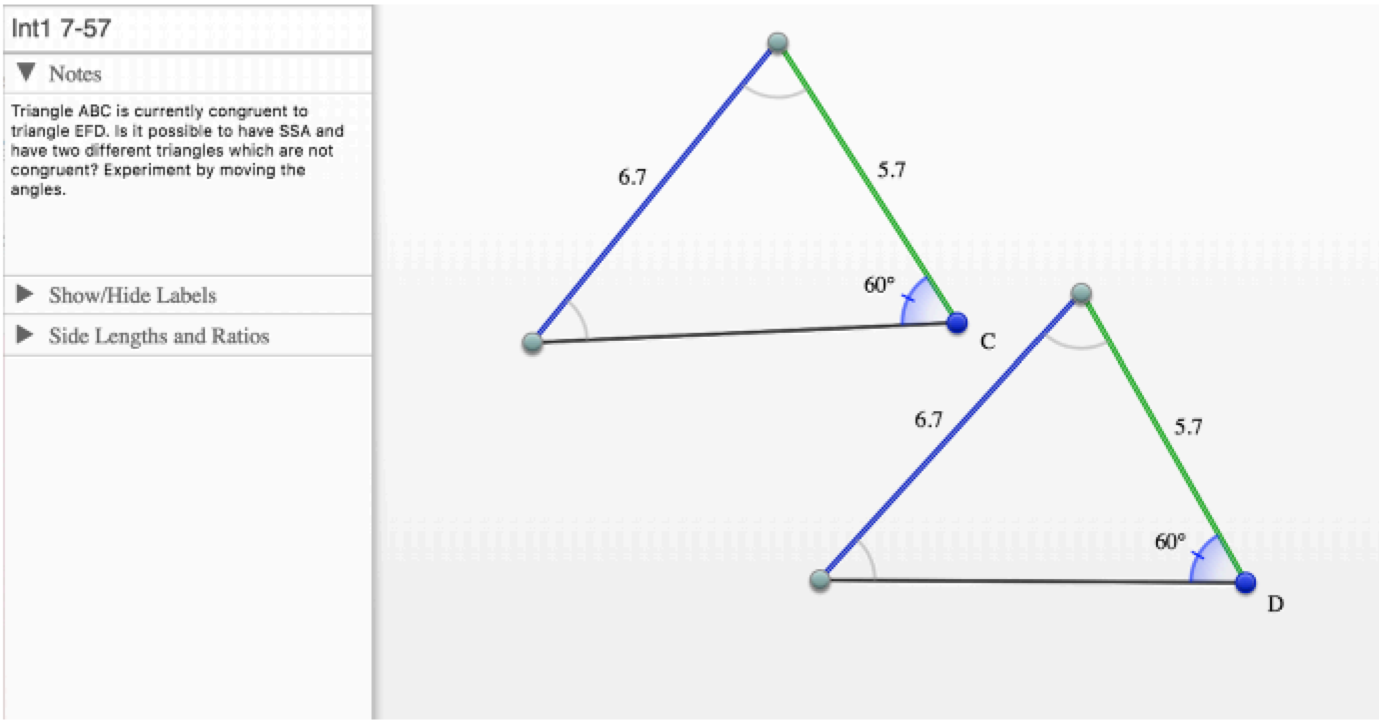
INT1 7-54 Student eTool (CPM):



INT1 7-56 Student eTool (CPM):



INT1 7-57 Student eTool (CPM):



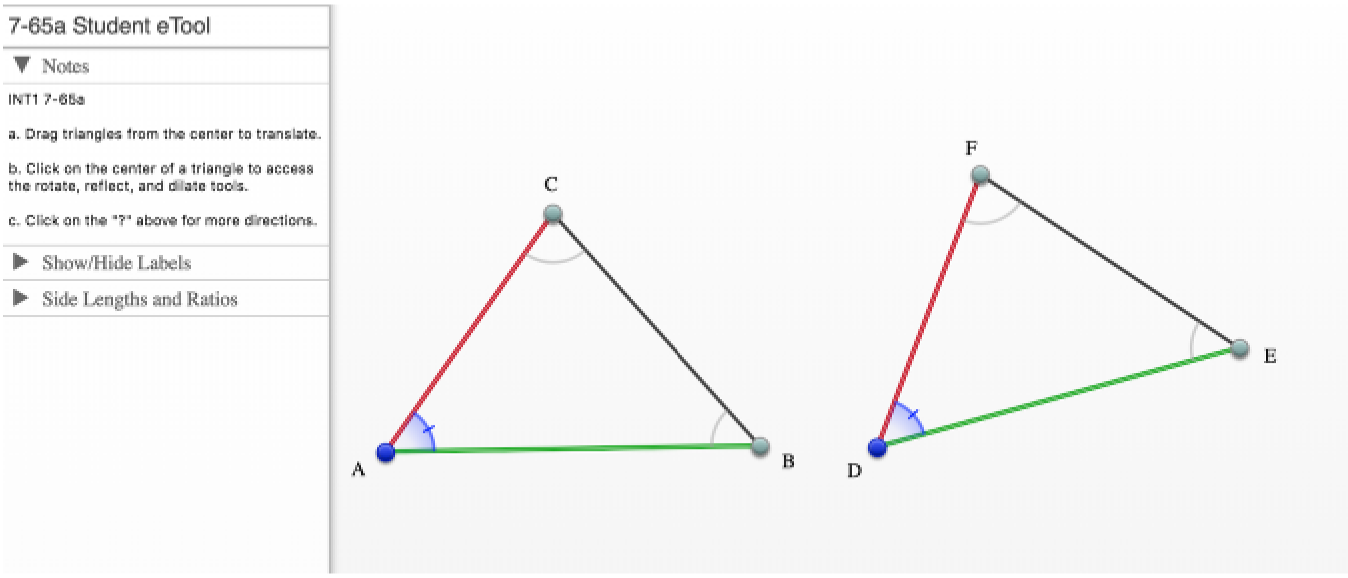
INT1 7.1.6: 7-65a, 7-65b & 7-66 Student eTools (CPM)

Click on the links below to access eTools.

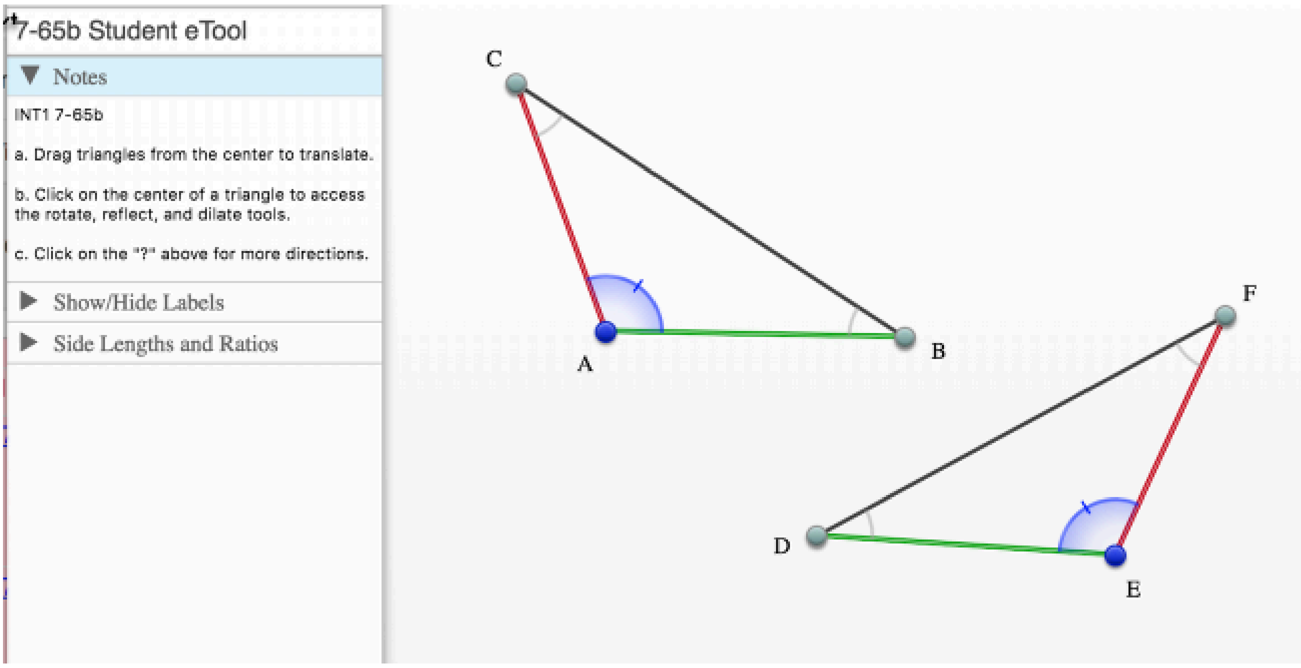
7-65a Student eTool (CPM) 7-65b Student eTool (CPM) 7-66 Student eTool (CPM)
For more information on Similarity eTools, view Similarity Toolkit (CPM).

PROVING SAS TRIANGLE CONGRUENCE

INT1 7-65a Student eTool (CPM):

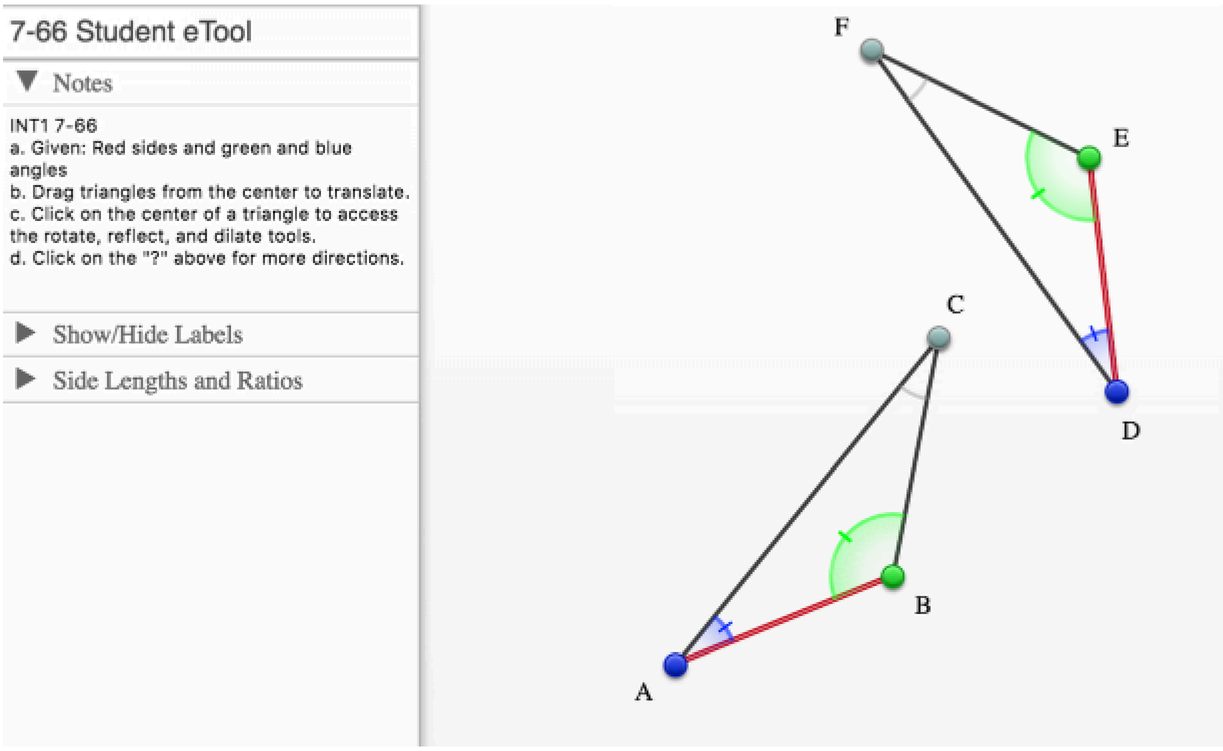


INT1 7-65b Student eTool (CPM):



PROVING ASA TRIANGLE CONGRUENCE

INT1 7-66 Student eTool (CPM):



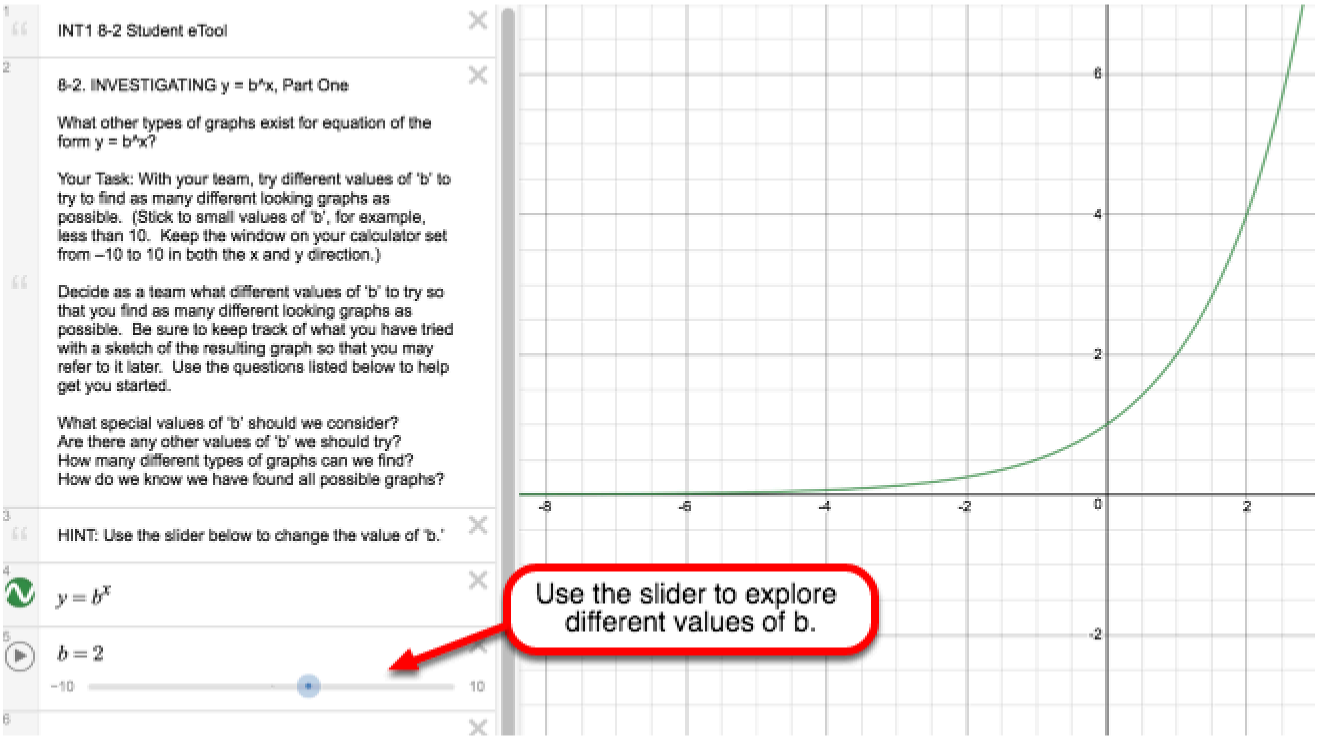
Chapter 8

INT1 8.1.1: 8-2 Student eTool (Desmos)

Click on the link below to access eTool.

8-2 Student eTool (Desmos)

Explore different values of b in problem 8-2.

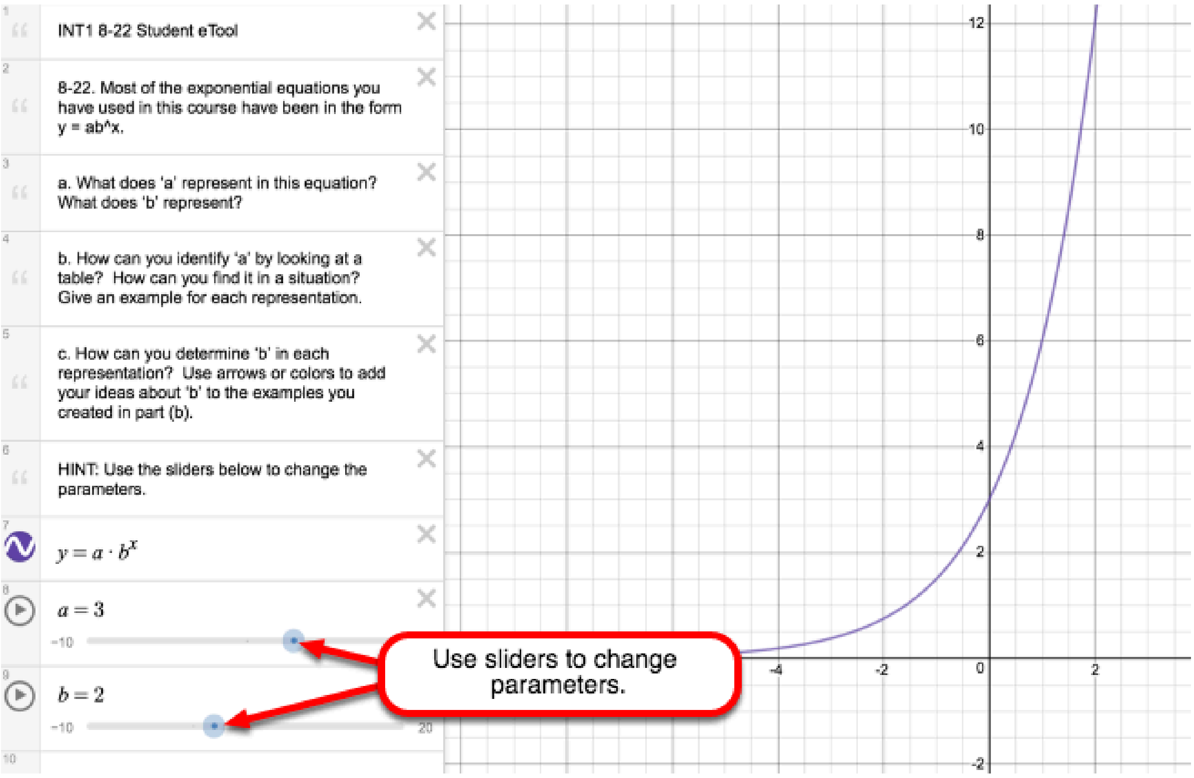


INT1 8.1.2: 8-22 Student eTool (Desmos)

Click on the link below to access eTool.

8-22 Student eTool (Desmos)

Explore problem 8-22 with the eTool.

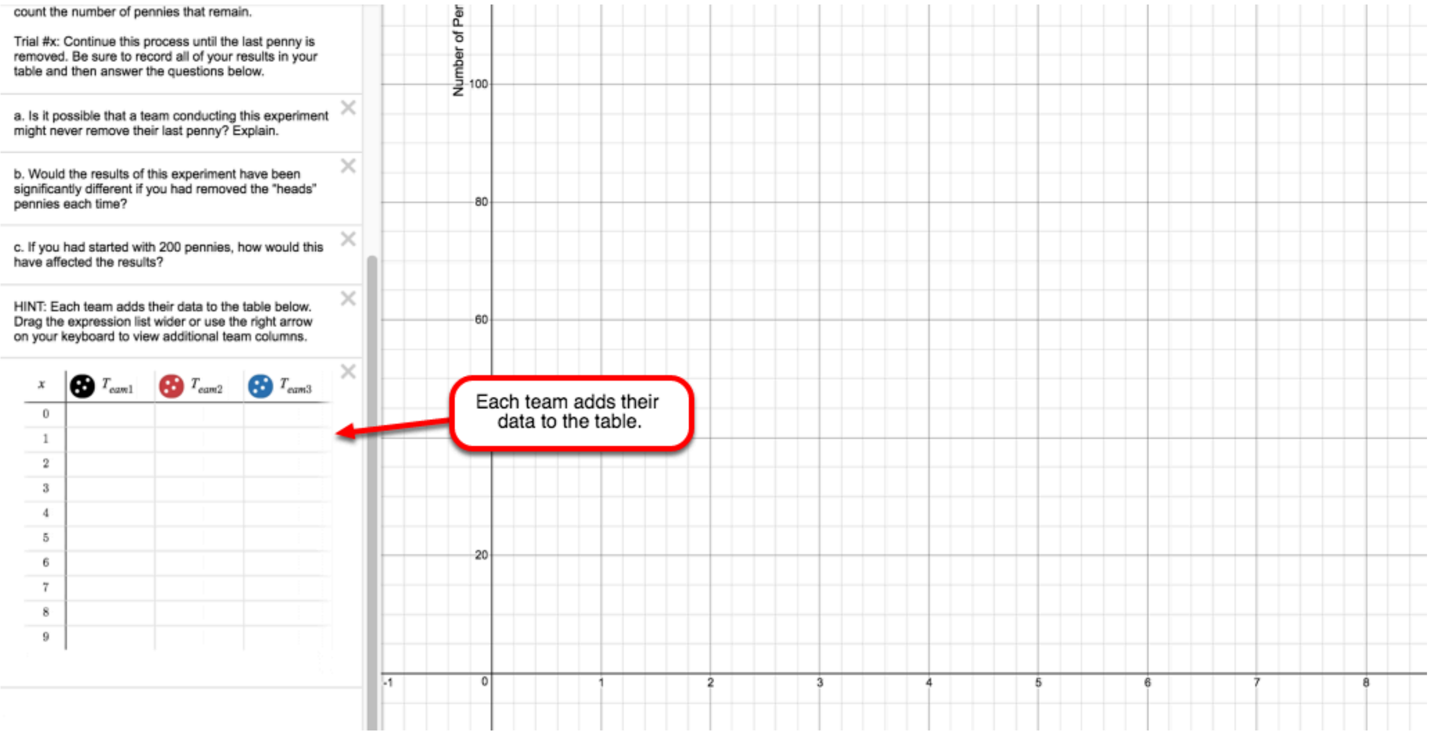


INT1 8.1.4: 8-54 & 8-55 Student eTool (Desmos)

Click on the link below to access eTool.

8-55 & 8-55 Student eTool (Desmos)

Decide what your dependent and independent variables are for "The Penny Lab" data your team collected, clearly label them, and graph your data.

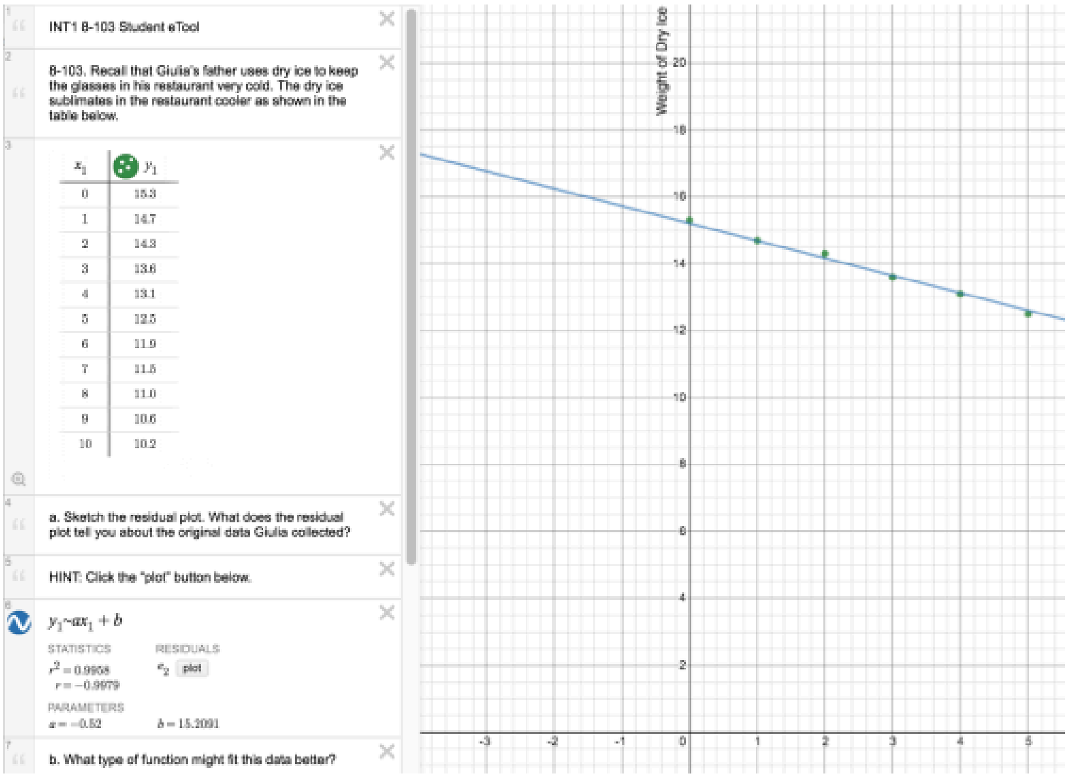


INT1 8.2.2: 8-103 Student eTool (Desmos)

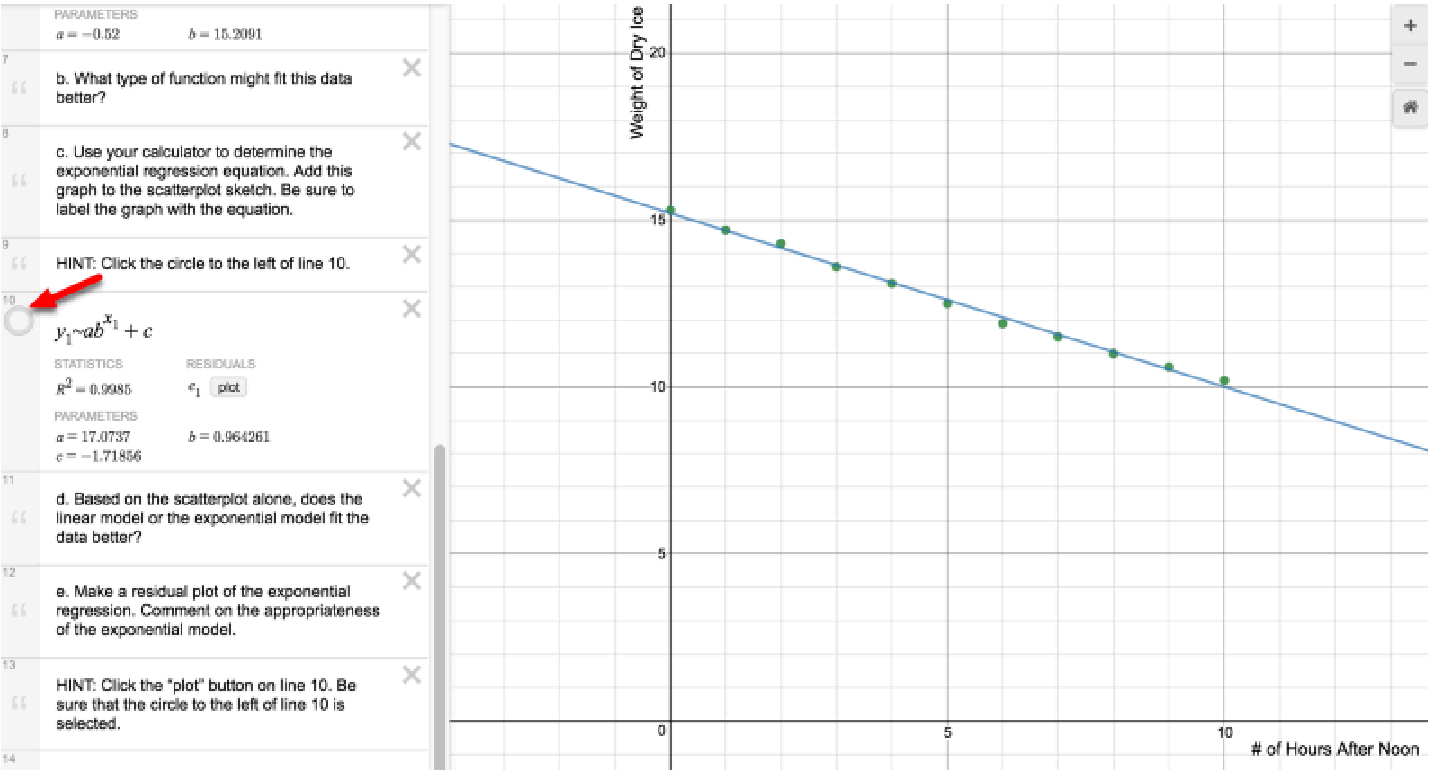
Click on the link below:

[8-103 Student eTool (Desmos)]

INT1 8-103 Student eTool (Desmos):



x_1	y_1
0	15.3
1	14.7
2	14.3
3	13.6
4	13.1
5	12.5
6	11.9
7	11.5
8	11.0
9	10.6
10	10.2

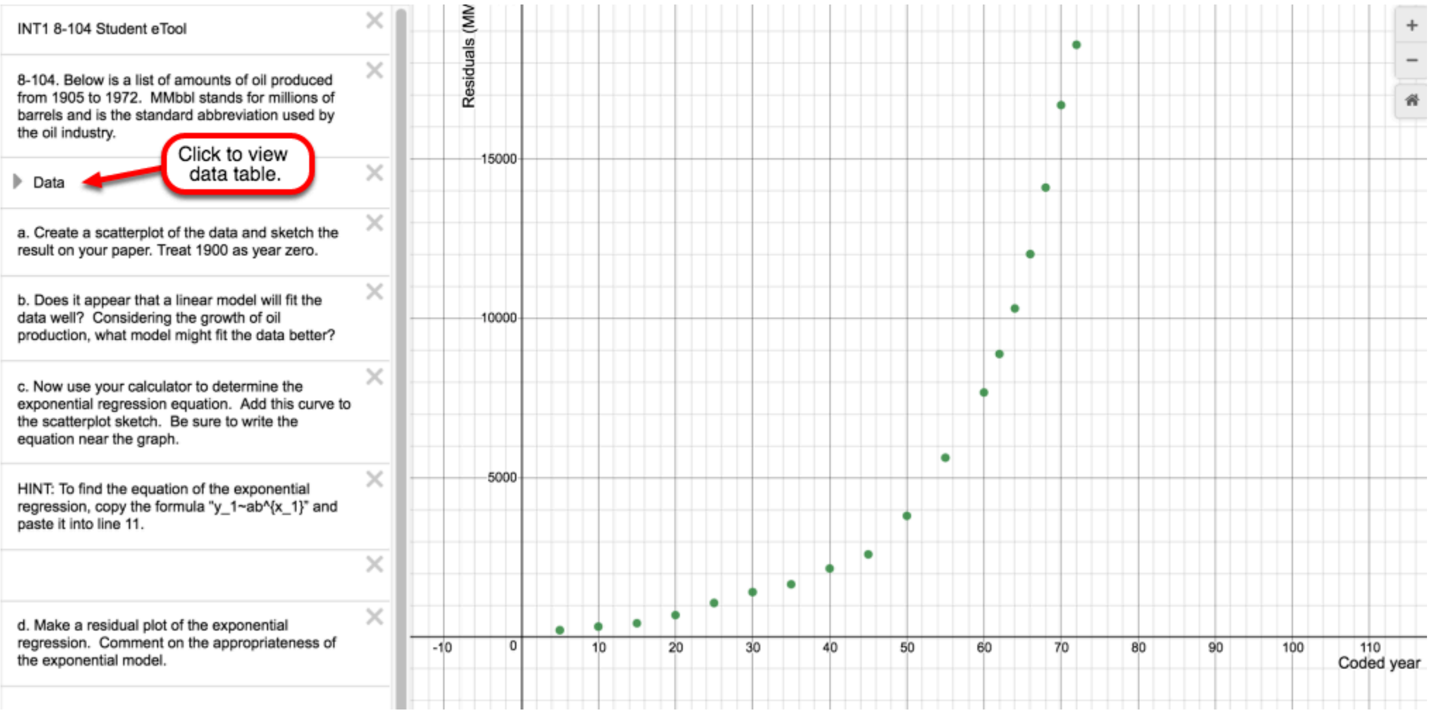

PARAMETERS
$a = -0.52$ $b = 15.2091$
7
b. What type of function might fit this data better?
8
c. Use your calculator to determine the exponential regression equation. Add this graph to the scatterplot sketch. Be sure to label the graph with the equation.
9
HINT: Click the circle to the left of line 10.
10
$y_1 \sim ab^{x_1} + c$
STATISTICS
$R^2 = 0.9985$
RESIDUALS
e_1 plot
PARAMETERS
$a = 17.0737$ $b = 0.964261$
$c = -1.71856$
11
d. Based on the scatterplot alone, does the linear model or the exponential model fit the data better?
12
e. Make a residual plot of the exponential regression. Comment on the appropriateness of the exponential model.
13
HINT: Click the "plot" button on line 10. Be sure that the circle to the left of line 10 is selected.
14
Weight of Dry Ice
# of Hours After Noon
20
15
10
5
0
5
10

INT1 8.2.2: 8-104 Student eTool (Desmos)

Click on the link below:

[8-104 Student eTool (Desmos)]

INT1 8-104 Student eTool (Desmos):

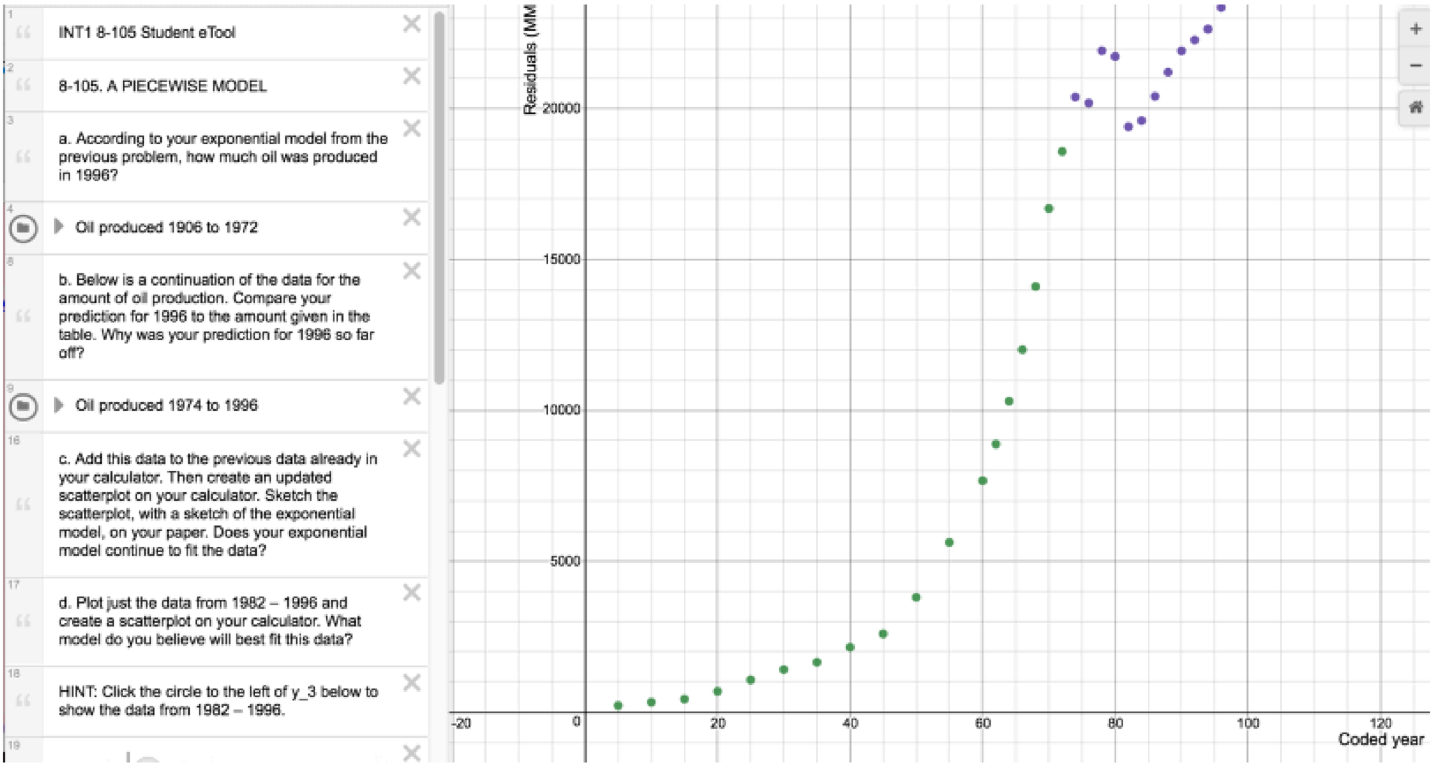


INT1 8.2.2: 8-105 Student eTool (Desmos)

Click on the link below:

[8-105 Student eTool (Desmos)]

INT1 8-105 Student eTool (Desmos):



HINT: Click the circle to the left of y_3 below to show the data from 1982 – 1996.

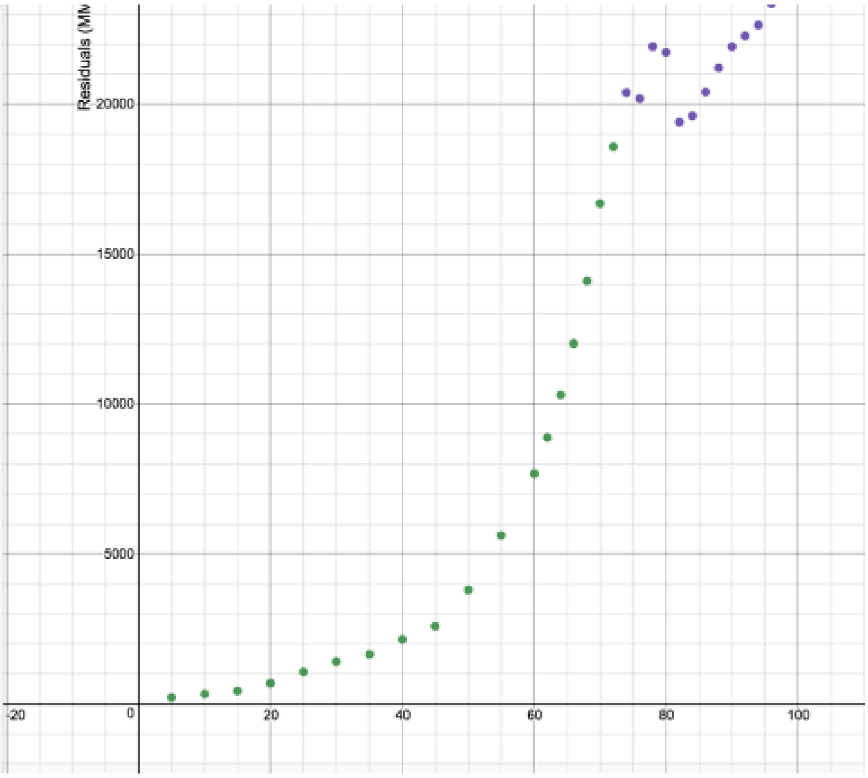
x_3	y_3
82	19403
84	19608
86	20410
88	21210
90	21917
92	22278
94	22640
96	23360

e. Use your calculator to determine a regression line for the data from 1982 – 1996.

HINT: See the eTools for problems 6-105 and 6-106 for regression formulas. Be sure to use x_3 and y_3 for your variables.

f. Comment on the residuals plot.

g. With this new linear model, can you make a better prediction than you did in part (a) for the amount of oil produced in 1996?



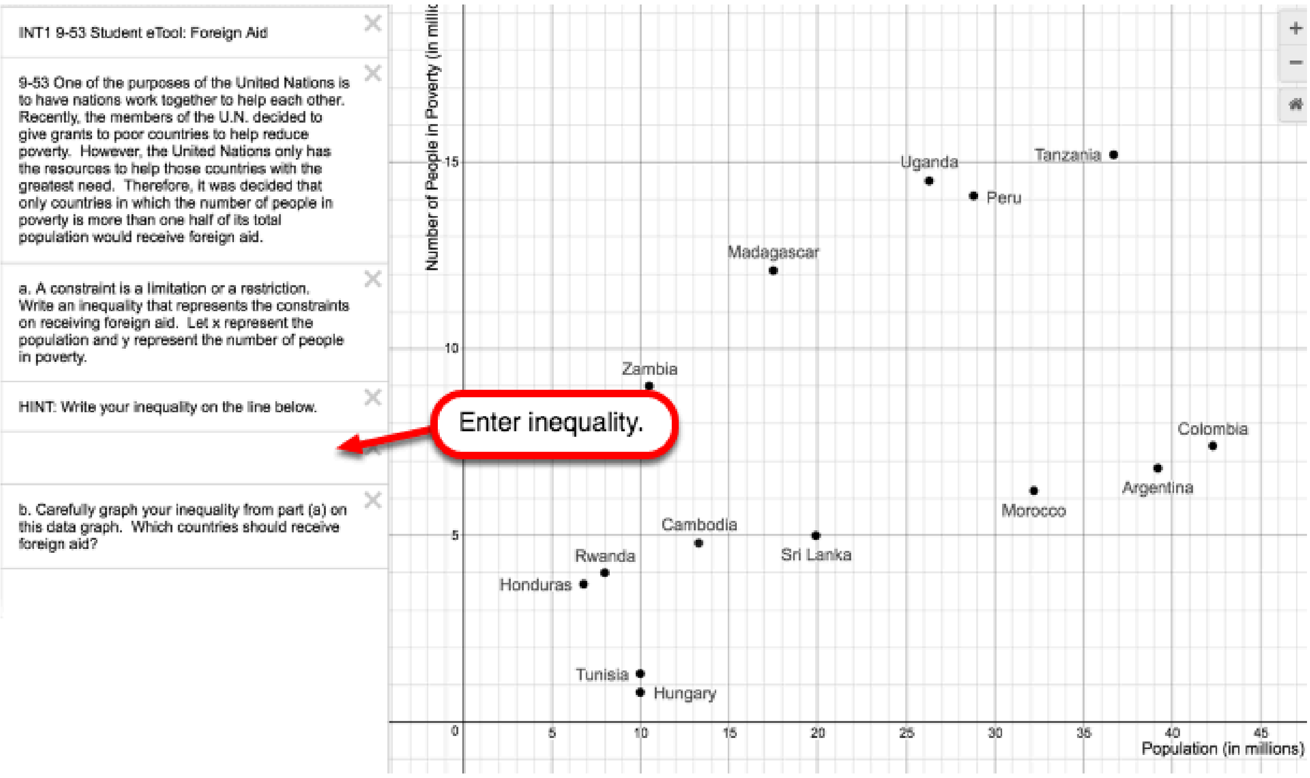
Chapter 9

INT1 9.2.2: 9-53 Student eTool (Desmos)

Click on the link below to access eTool.

9-53 Student eTool (Desmos)

Write your inequality in the eTool below to graph the constraints on receiving foreign aid. Then identify the countries that should receive foreign aid.



INT1 9.3.2: 9-78 Student eTool (Desmos)

Click on the link below to access eTool:

9-78 Student eTool (Desmos)

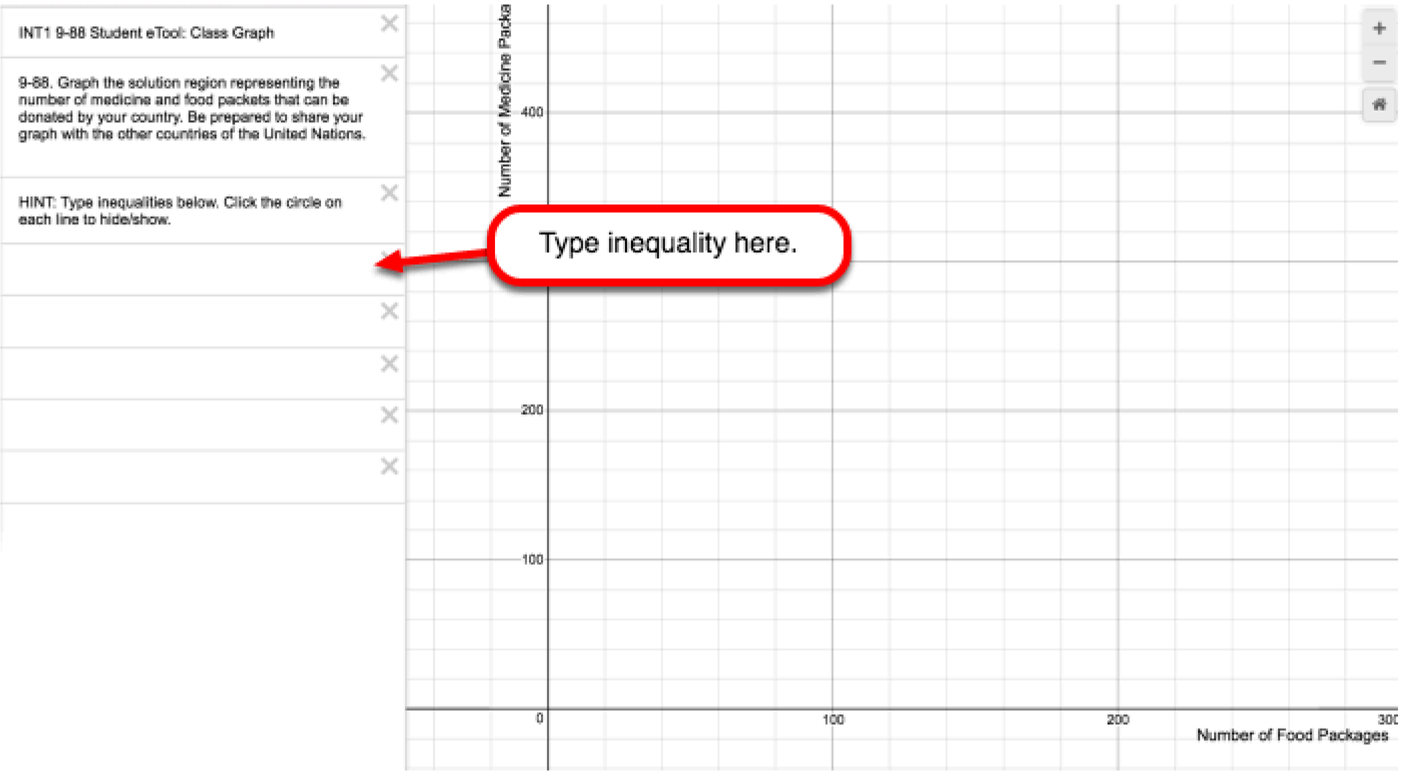
Your team must determine where to send the search and rescue teams. Look carefully for information that will help determine where the balloon might be found. Identify the probable landing sight on the map.

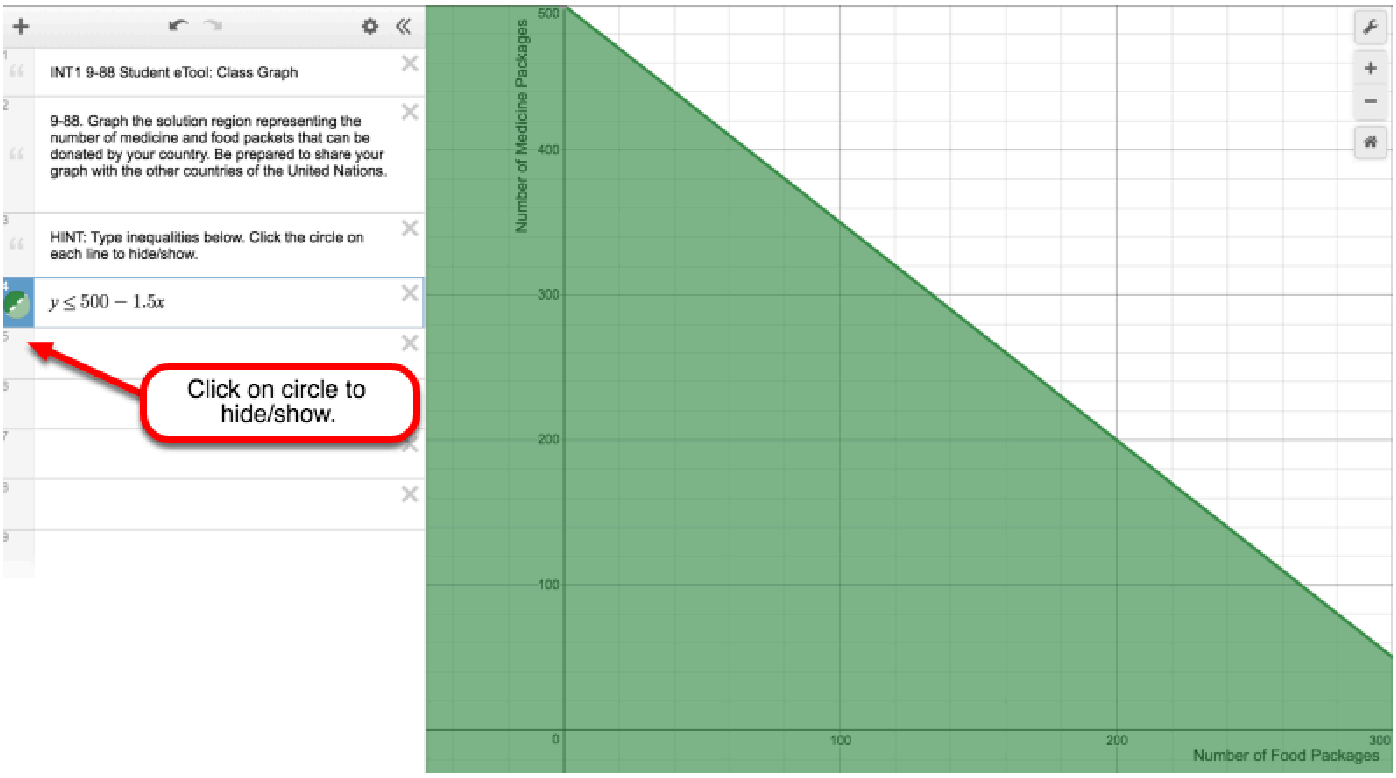
INT1 9.3.3: 9-88 Student eTool (Desmos)

Click on the link below to access eTool:

[9-88 Student eTool: Class Graph (Desmos)]()

Type an inequality expressing how many food and medicine packages your country is able to give. Let x equal the number of food packages and y equal the number of medicine packages.




INT1 9-88 Student eTool: Class Graph
9-88. Graph the solution region representing the number of medicine and food packets that can be donated by your country. Be prepared to share your graph with the other countries of the United Nations.
HINT: Type inequalities below. Click the circle on each line to hide/show.
y ≤ 500 − 1.5x
Click on circle to hide/show.
Number of Medicine Packages
Number of Food Packages
500
400
300
200
100
0
100
200
300

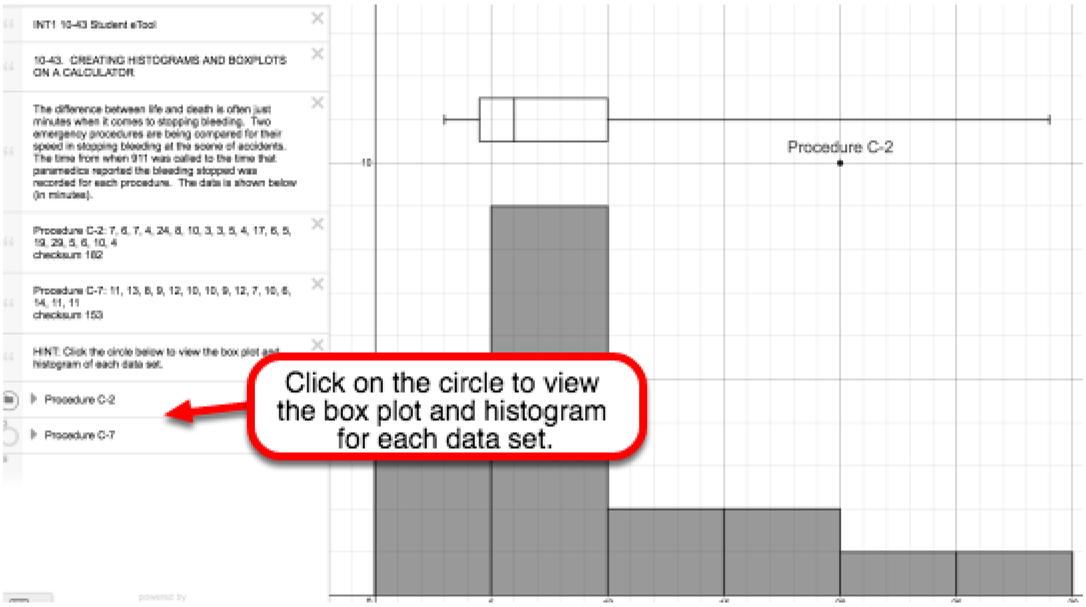
Chapter 10

INT1 10.1.3: 10-43 Student eTool (Desmos)

Click on the link below to access eTool:

[10-43 Student eTool (Desmos)]

Create histograms and box plots for Procedure C-2 and C-7 (the time from when 911 was called to the time the parametics reported the bleeding stopped). Click on the circle to view the histogram and box plot for each dataset

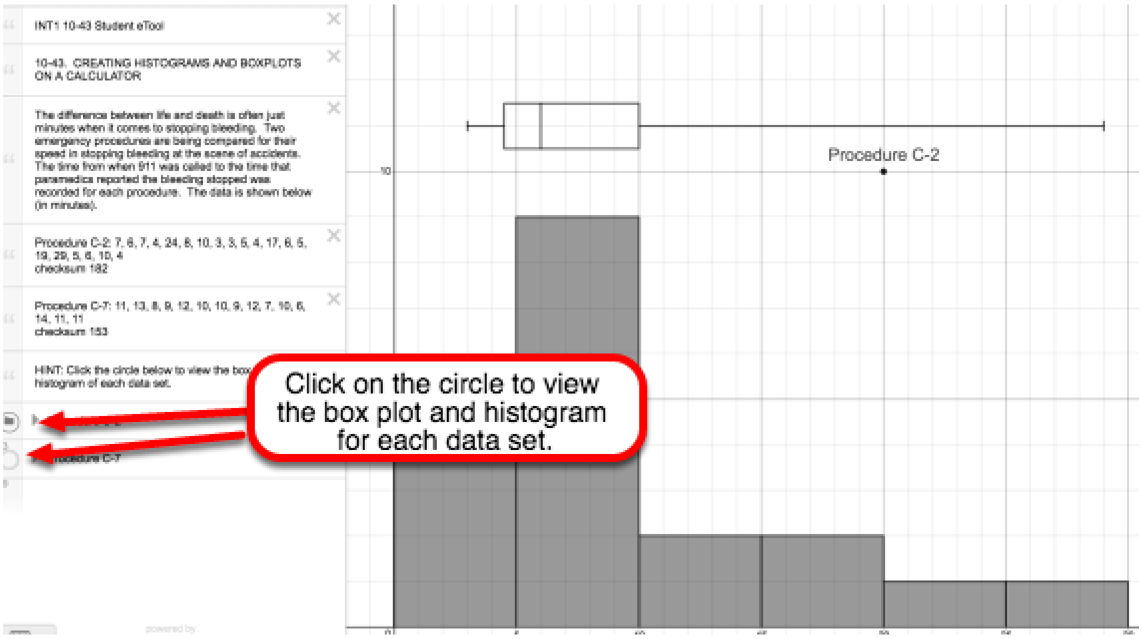


INT1 10.1.4: 10-60 Student eTool (Desmos)

Click on the link below to access eTool:

10-60 Student eTool (Desmos)

Create histograms and box plots for Sugar W and P datasets (biologist trying to determine which sugar is more successful in growing a particular eukaryotic cell). Click on the circle to view the histogram and box plot for each dataset.



Chapter 11

INT1 11.2.6: 11-116 Student eTool (Desmos)

Click on the link below to access eTool:

[11-116 Student eTool (Desmos)]

Write an inequality for each of the four constraints. Graph using eTool.