CC Algebra 2 eTools - T

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General eTools

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)

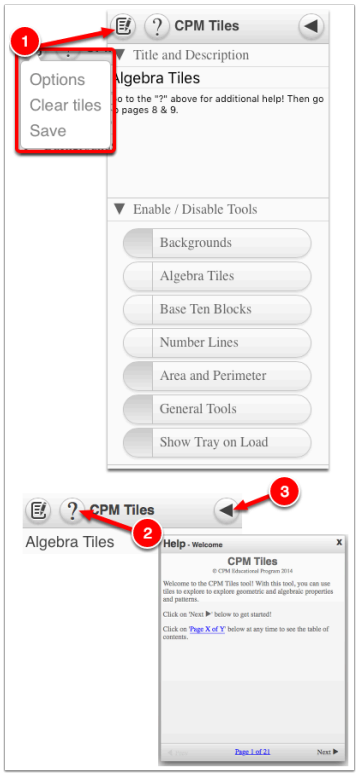
1. The top bar has three main parts: Pen & Paper Icon, '?' Icon, and the Arrow Icon.

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.

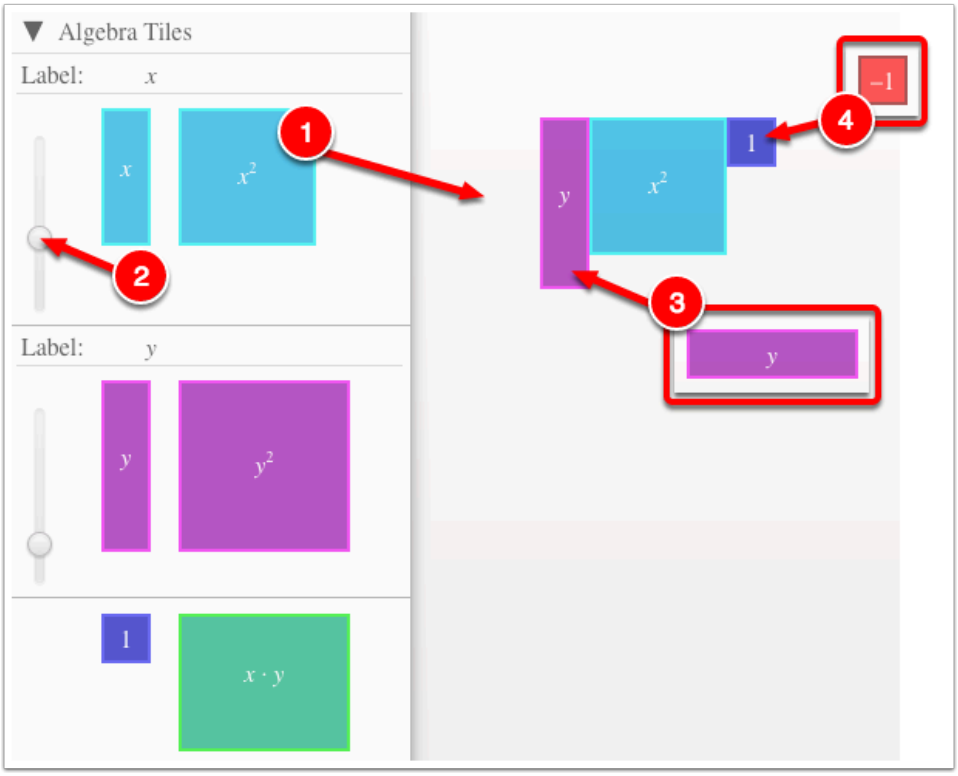
   Save - This will save all the changes made.
2. Select the '?' icon for directions.
3. Select the Arrow Icon at the right to open and close the tray.



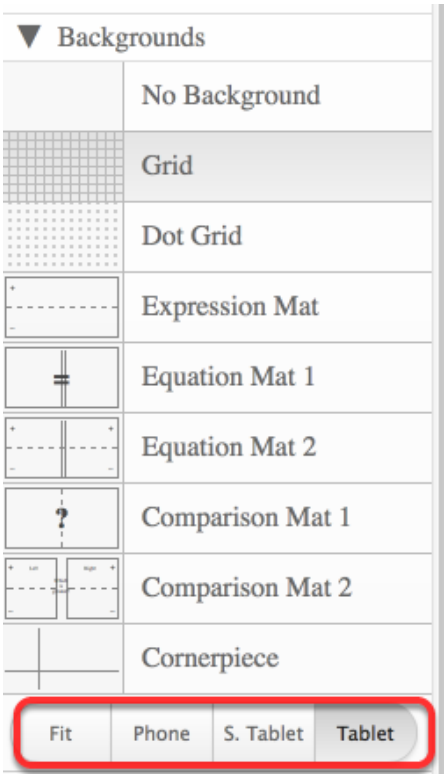
2. Drag tiles from the tray at the left to the display area at the right.

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.

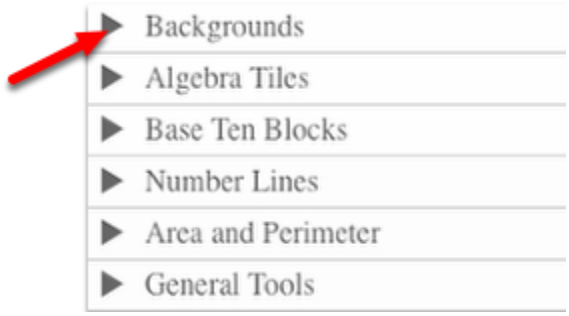


3. Choose from a variety of different mats. Also choose from a variety of sizes to fit on various devices.



4. Choose from a variety of different tiles:

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



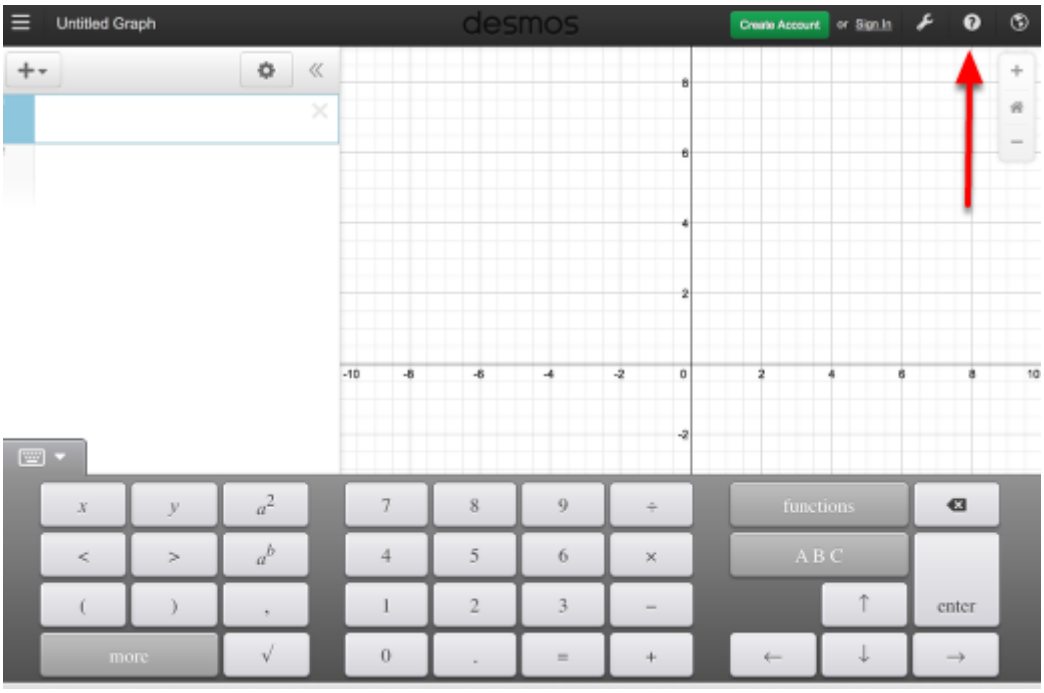
Desmos Graphing Calculator

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

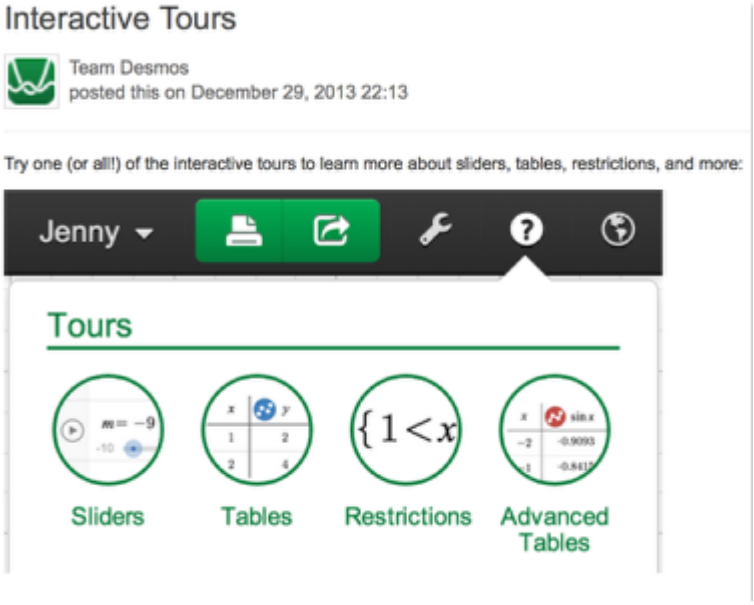
1. Click on all of the buttons. Try it out! For extra help, click the "?".



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

Sliders
Tables
Advanced Tables
Restrictions

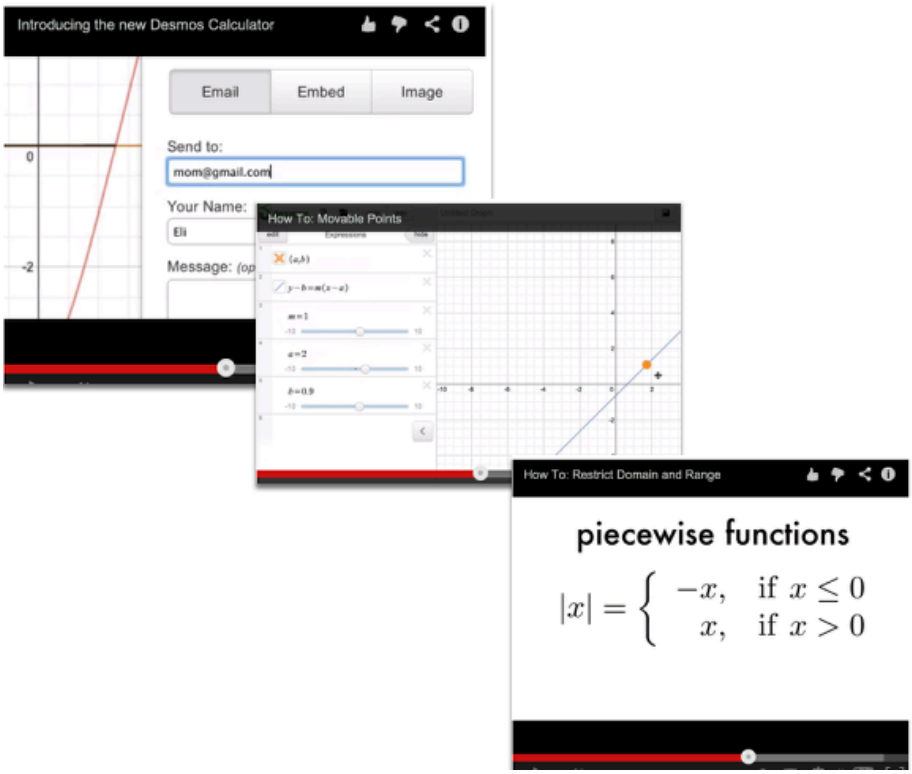
3. The interactive tours will NOT let you make a mistake! Try the links above!



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]

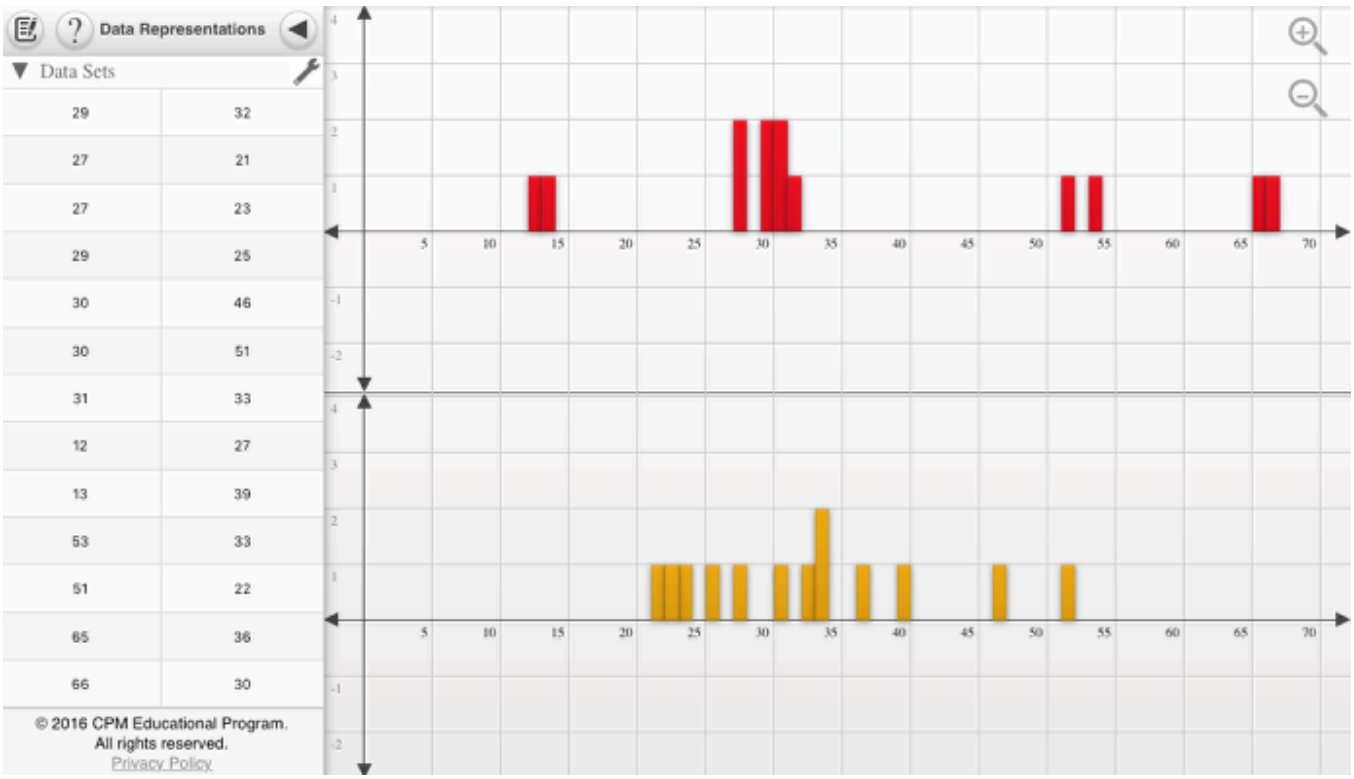
Data Representations (CPM)

Click the link below for “CPM Data Representations"

CPM Data Representations

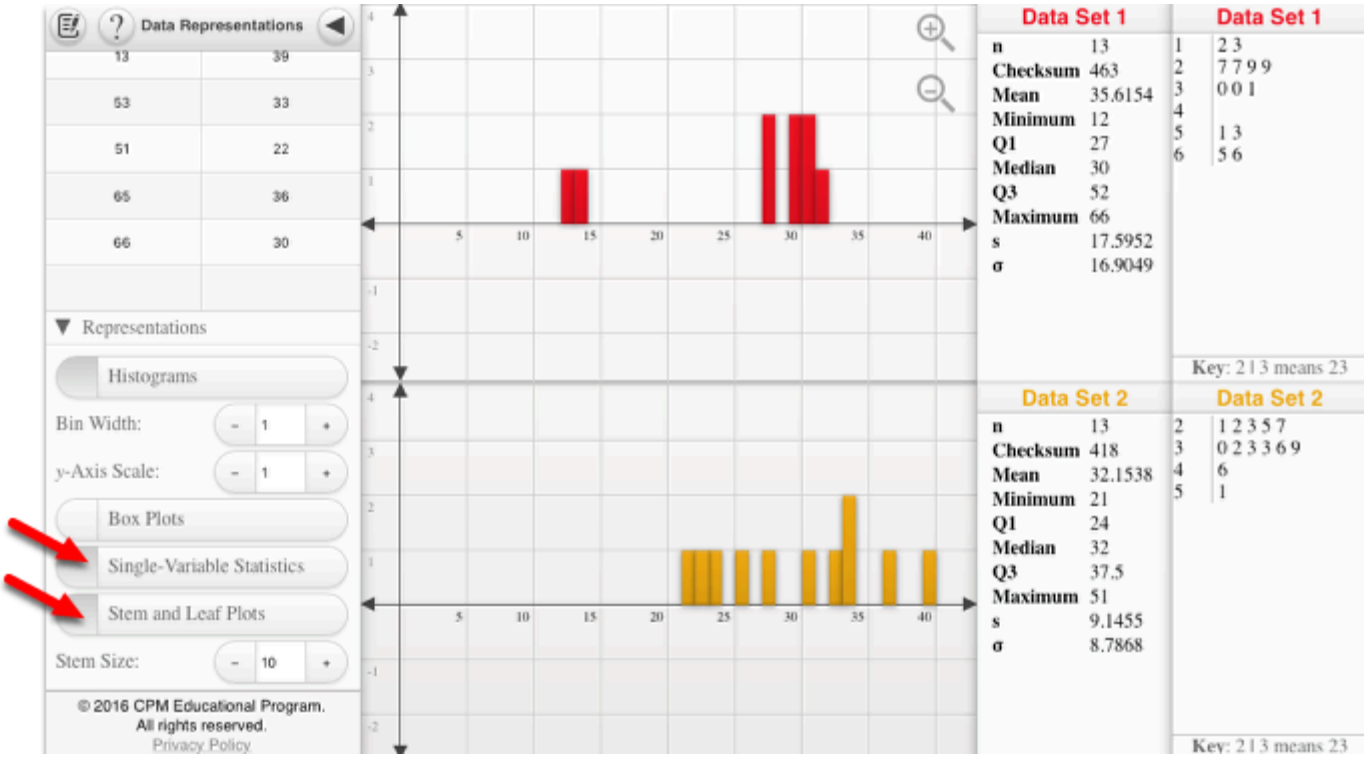
1. CPM Data Representations:

Type in up to two sets of data into the columns under the Data Sets tab. Click the wrench to sort or change the graph color. Click the Data Sets arrow to hide the data.



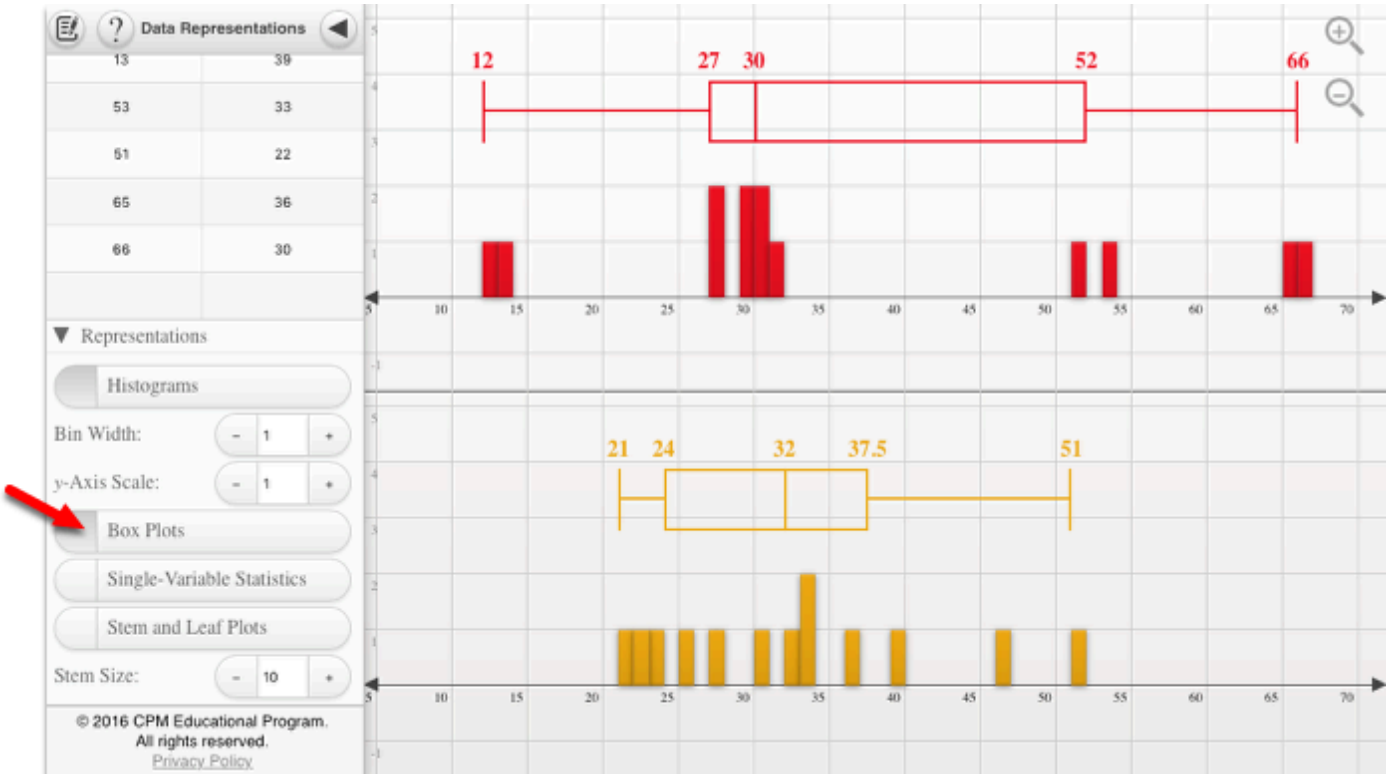
2. Single-Variable Statistics or the Stem and leaf Plots:

When choosing Single-Variable Statistics or the Stem and Leaf Plots from the left tray, the data/plot(s) show from the right. Unclick from the left to close the trays at right.



3. Box Plots

Note: Use the zoom in and out buttons at the upper right to position the histograms in a friendly window. On a computer, you can use the mouse wheel. On a tablet, use two fingers to pinch or spread data.



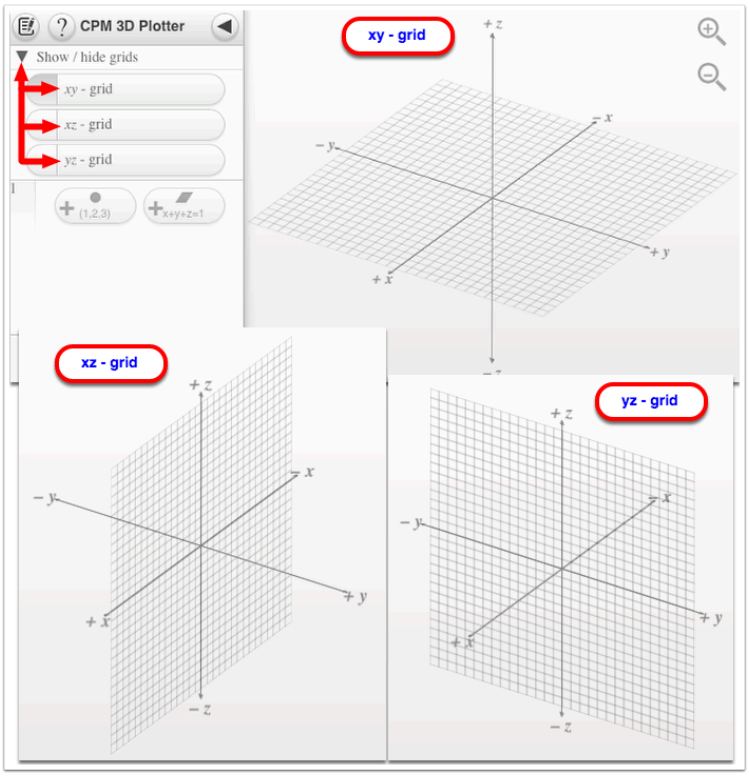
3D Plotter (CPM)

Click on the link below.

3D Plotter (CPM)

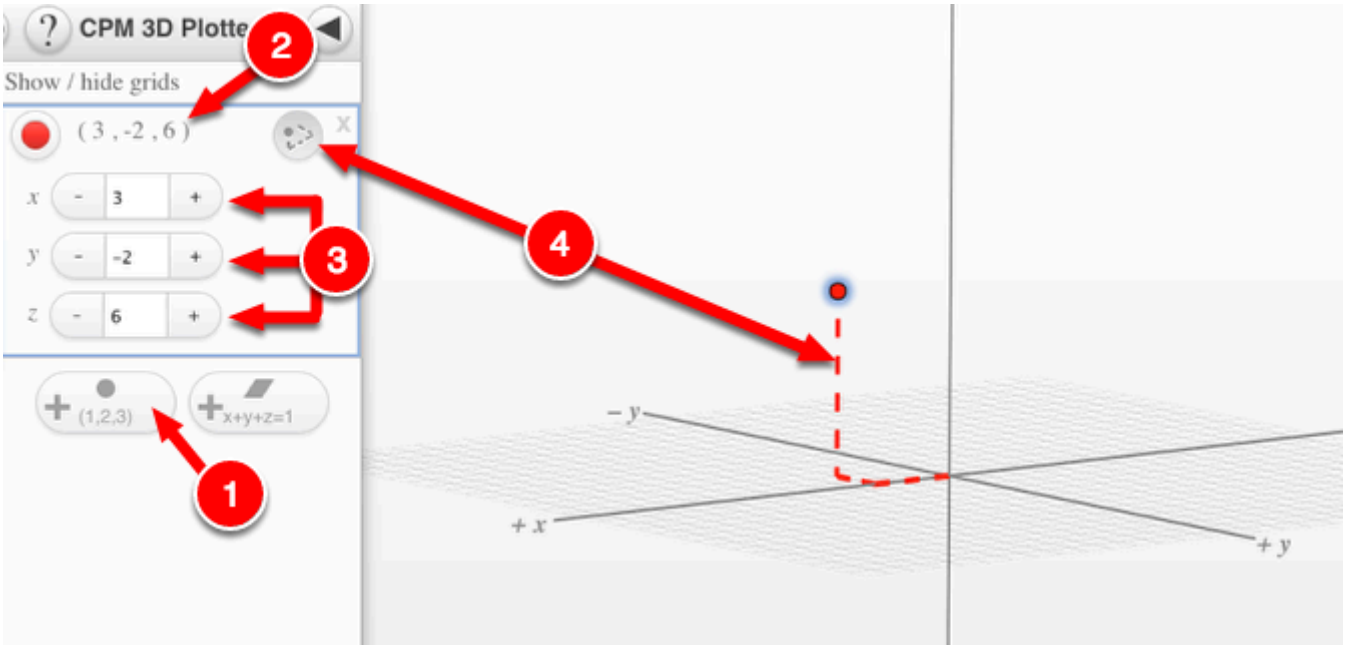
1. Grids:

- Click on the 'Show/hide grids' arrow and select the grid to be used.



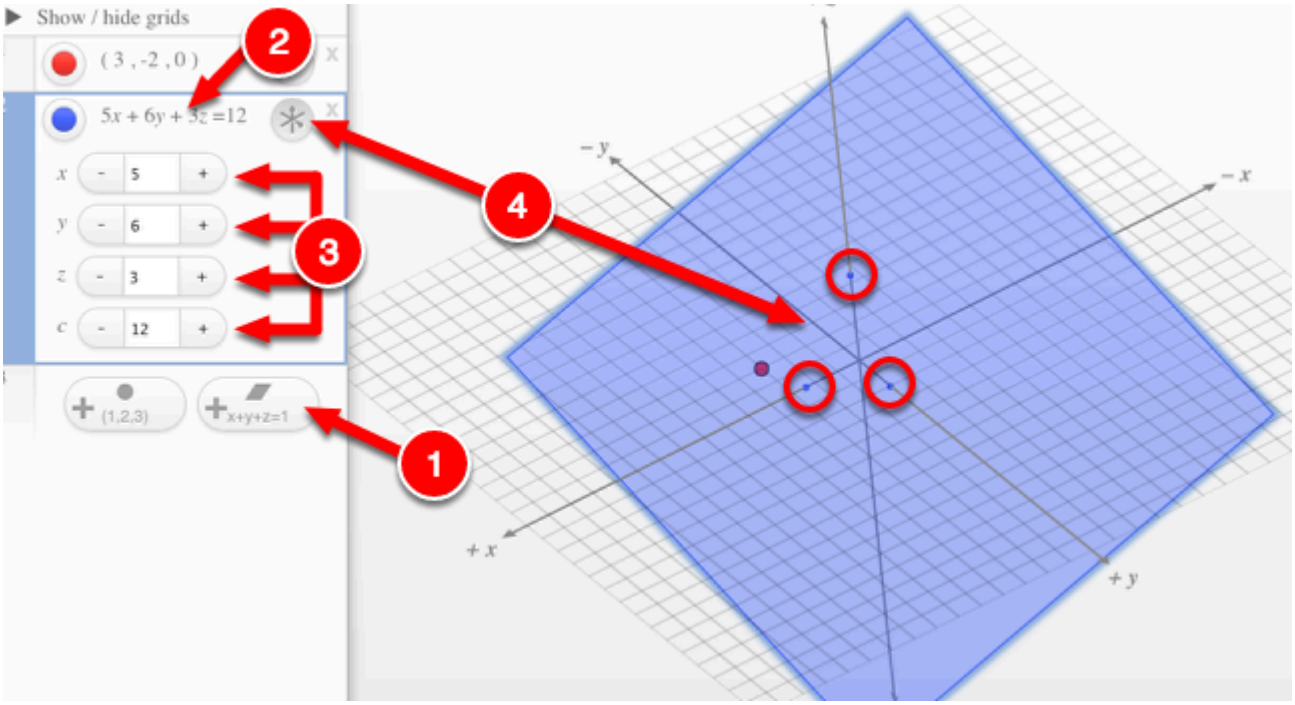
2. Point Plotter:

1. Click on the point plotter button to add a point.
2. Click on the (x, y, z) coordinates.
3. Type or click the '-' and '+' to modify the coordinates.
4. Click the trace button to view the path.



3. Plane plotter:

1. Click on the plane plotter button to add a plane.
2. Click on the equation to view the variables and constant.
3. Type or click the '-' and '+' to modify the coordinates for the variables and constant.
4. Click the intersect button to view the point the plane crosses the x,y, & z axes.



Chapter 1

CCA2 1.1.2: 1-10 Student eTool (Desmos)

Click on the link below to access eTool.

1-10 Student eTool (Desmos)

Use this eTool to learn about one of the following functions.

i. $y = 2\sqrt{9-x} - 4$

ii. $y = \sqrt{100-x^2}$

iii. $y = 3\sqrt{x+4} - 6$

iv. $y = 3\sqrt{4-x} - 3$

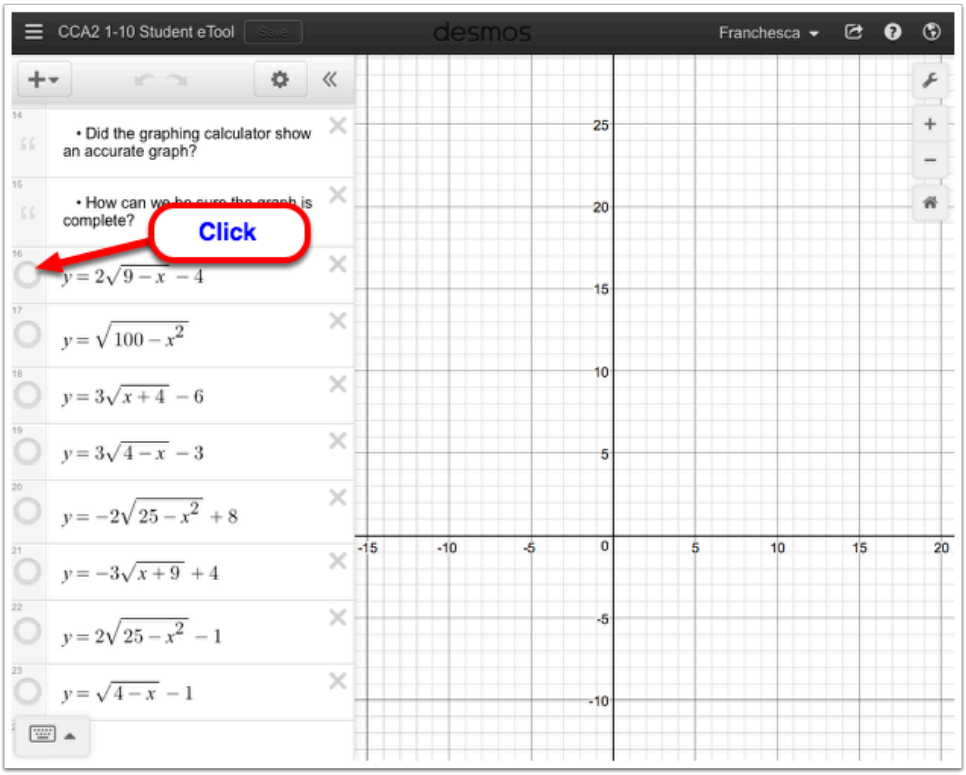
v. $y = -2\sqrt{25-x^2} + 8$

vi. $y = -3\sqrt{x+9} + 4$

vii. $y = 2\sqrt{25-x^2} - 1$

viii. $y = \sqrt{4-x} - 1$

Click the circle icon before each functions to view the graph.



Chapter 2

CCA2 2.1.2: 2-12 Student eTool (Desmos)

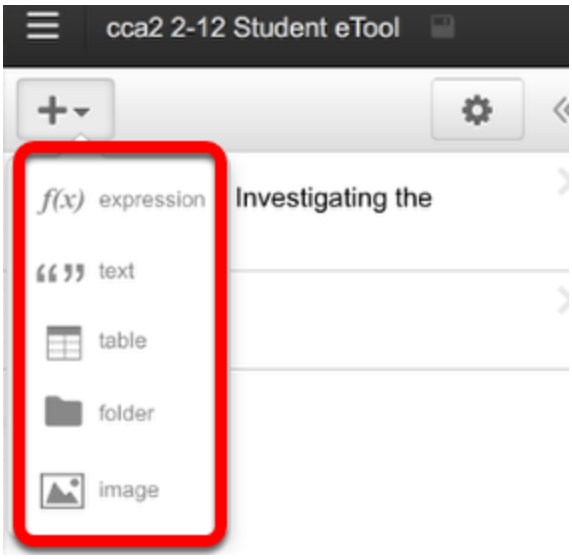
Click on the link below.

2-12 Student eTool (Desmos)

1. Customize this tool for your project by:

- Adding text for your title, team names, and explanations.
- Add images for labels on the graph.
- Hide your work in folders clicking on the circle in front of it when you want the contents viewed.

2. Add various tools to your project.



CCA2 2.1.3: 2-30 Transforming Parabolas (Desmos)

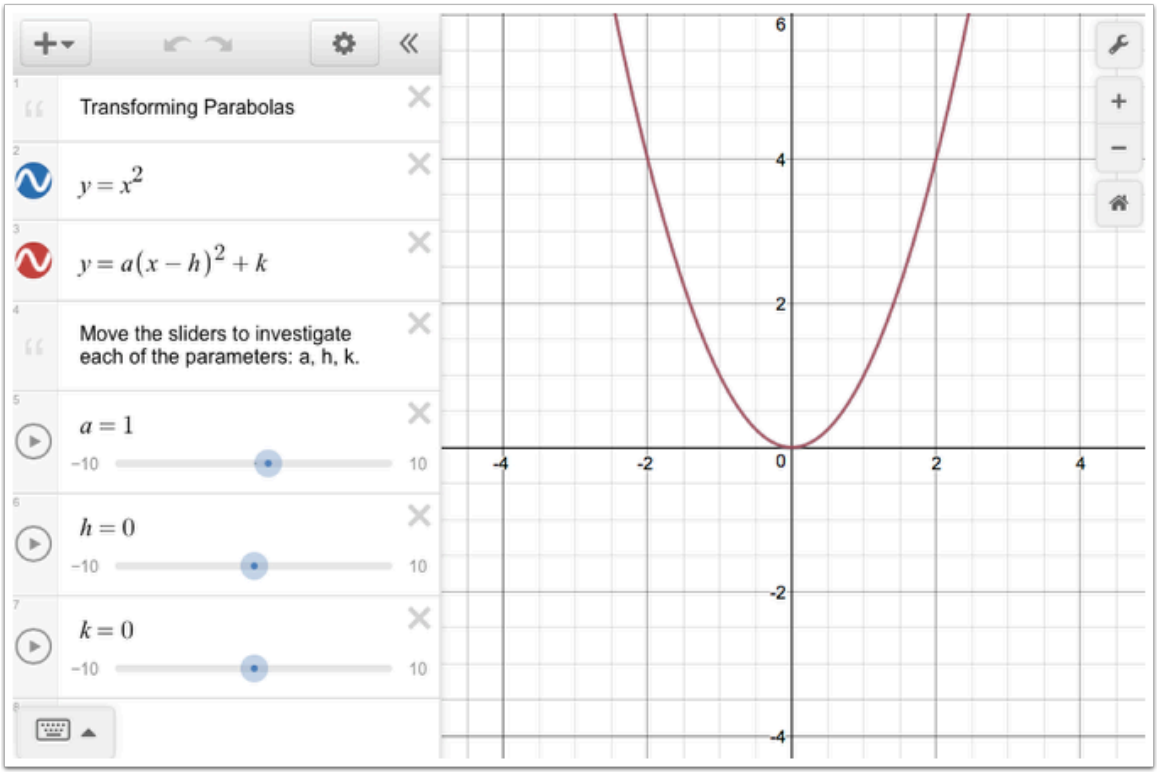
Click on the link below.

CCA2 2-30 Transforming Parabolas (Desmos)

Transforming Parabolas

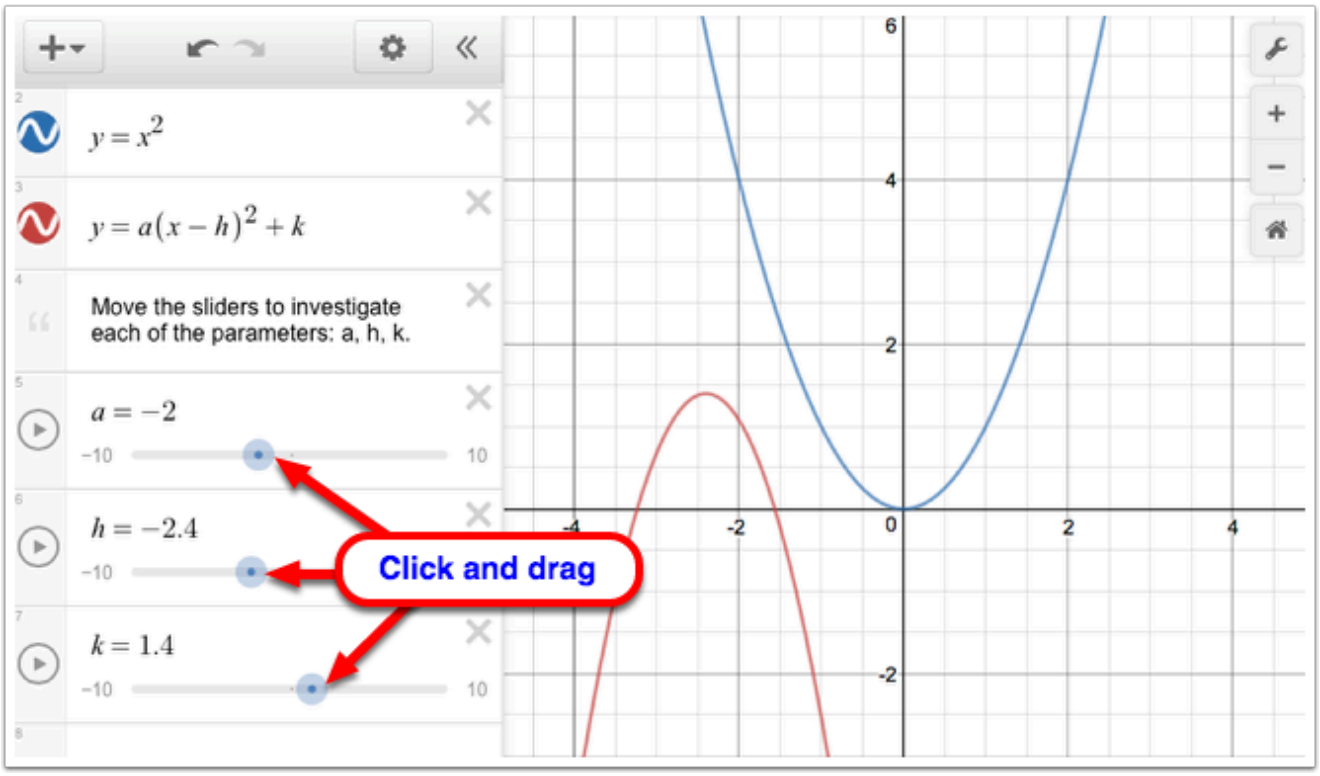
Use this eTool to support a class discussion about the equation $y = a(x - h)^2 + k$.

- Identify which **parameter** (a, h, or k) affects the orientation, vertical shift, horizontal shift, vertical stretch, and vertical compression of the graph compared to the graph of the parent function $y = x^2$.
- What values stretch the graph vertically? Compress the graph vertically? Why do those values have these impacts?
- What values cause the graph to flip vertically?
- What values cause the graph to shift to the left? To the right? Why?
- What values cause the graph to shift up or down? Why?
- Are there points on your graph that connect to specific parameters in the equation? Explain.



Use the sliders to change the parameters.

Click the blue points on the sliders and drag (horizontally) to change the parameters.


$y = x^2$
$y = a(x-h)^2 + k$
Move the sliders to investigate each of the parameters: a, h, k.
$a = -2$
$h = -2.4$
$k = 1.4$
−10
10
Click and drag
6
4
2
0
-2
-4
-2
2
4

CCA2 2.1.4: 2-43 Student eTool (CPM)

Click on the link below.

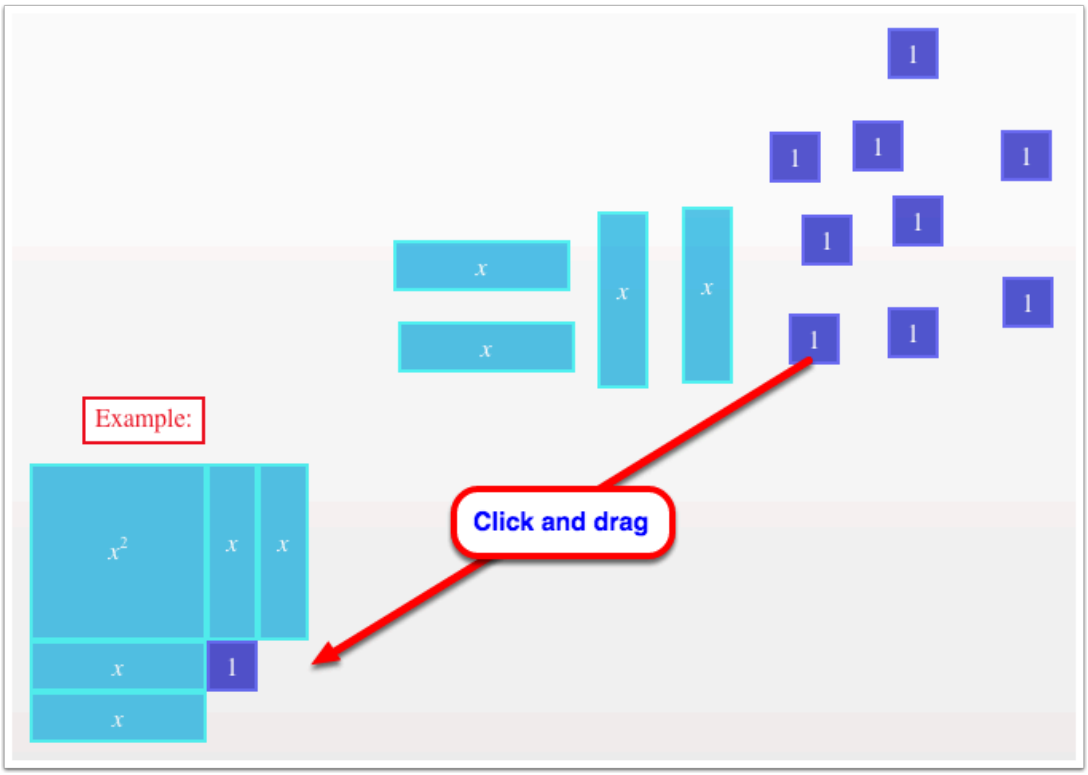
2-43 Student eTool (CPM)

Use the Algebra tiles to multiply and factor binomials.

- Use the algebra tiles to make squares.
- Use the ideas to learn how to "Complete the Square".

Move tiles to complete the figure.

Click each tile and drag it to the desired location to complete the square.

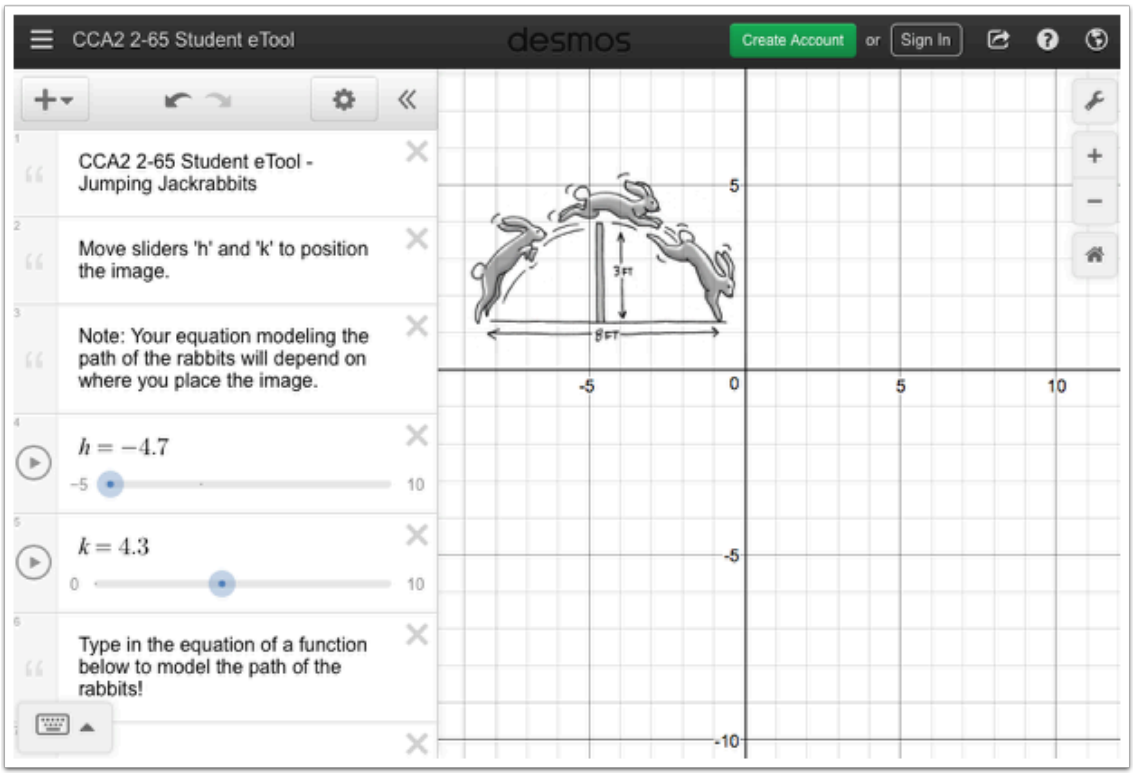

Example:
Click and drag

CCA2 2.1.5: 2-65 Student eTool (Desmos)

Click on the link below to access eTool.

2-65 Student eTool (Desmos)

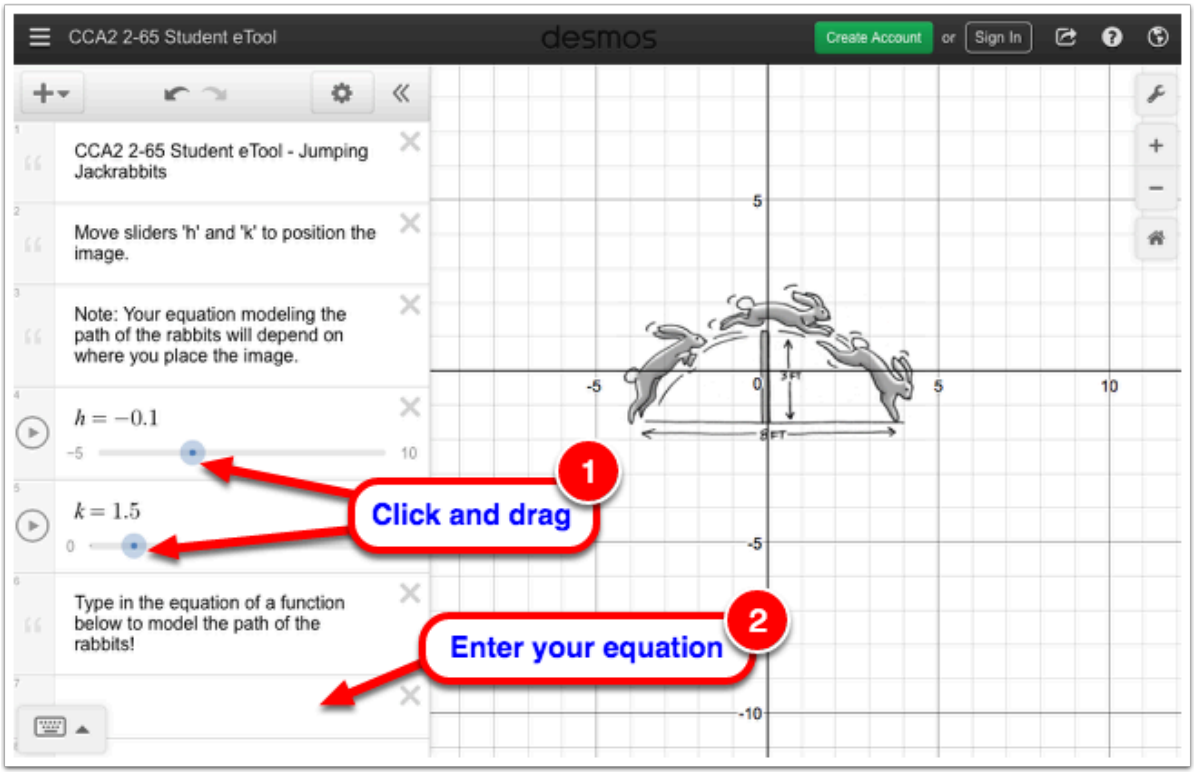
Decide in your team how to write a function that models the path of the rabbits.



1. Move the image of the jackrabbits.

- Click the blue points on each sliders and drag (horizontally) to move the image of the jackrabbits.

2. Enter the equation



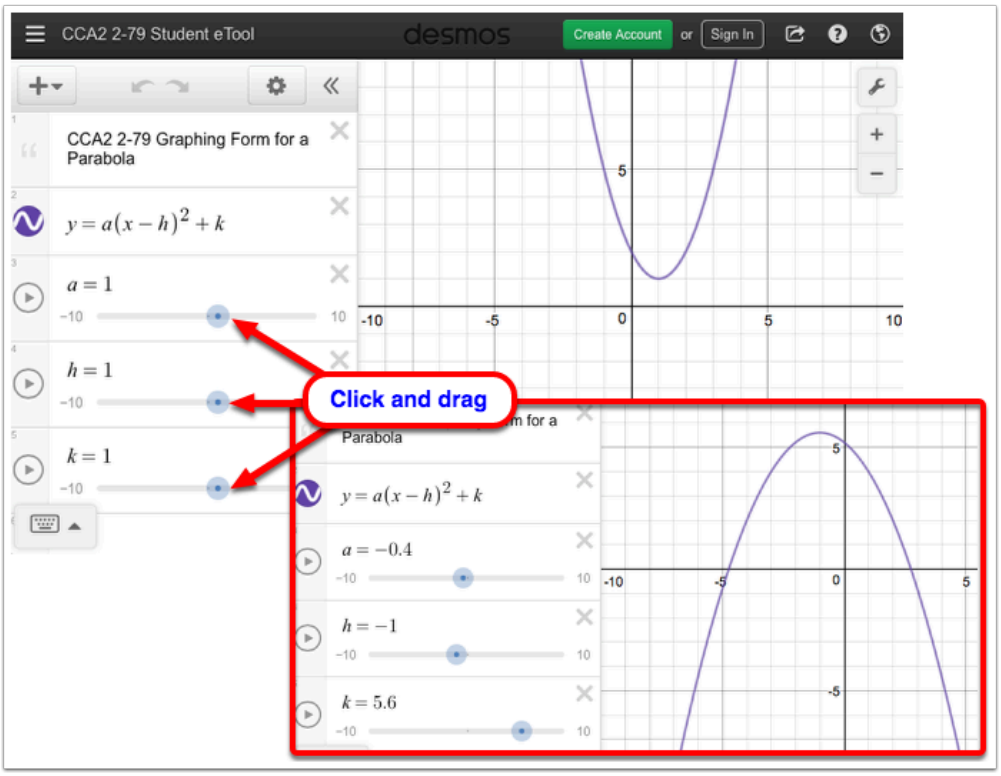
CCA2 2.2.1: 2-79 Student eTool (Desmos)

Click on the link below to access eTool.

2-79 Student eTool (Desmos)

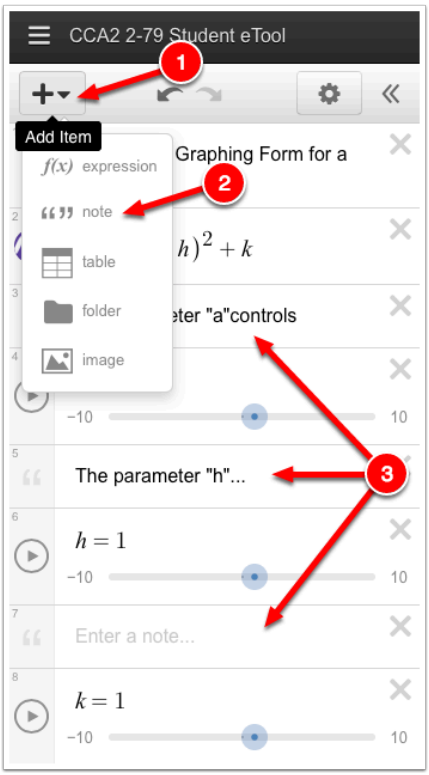
Move sliders to test your ideas.

- Click the blue points on each sliders and drag (horizontally).



Customize your project by adding text fields explaining each of the parameters.

1. Click the 'Add Item' icon.
2. Select 'note' in the menu.
3. Type the text you want to add in the text field/s.


CCA2 2-79 Student eTool
Add Item
f(x) expression
note
table
folder
image
Graphing Form for a
$h)^2 + k$
eter "a"controls
−10
10
The parameter "h"...
$h = 1$
−10
10
Enter a note...
$k = 1$
−10
10
1
2
3

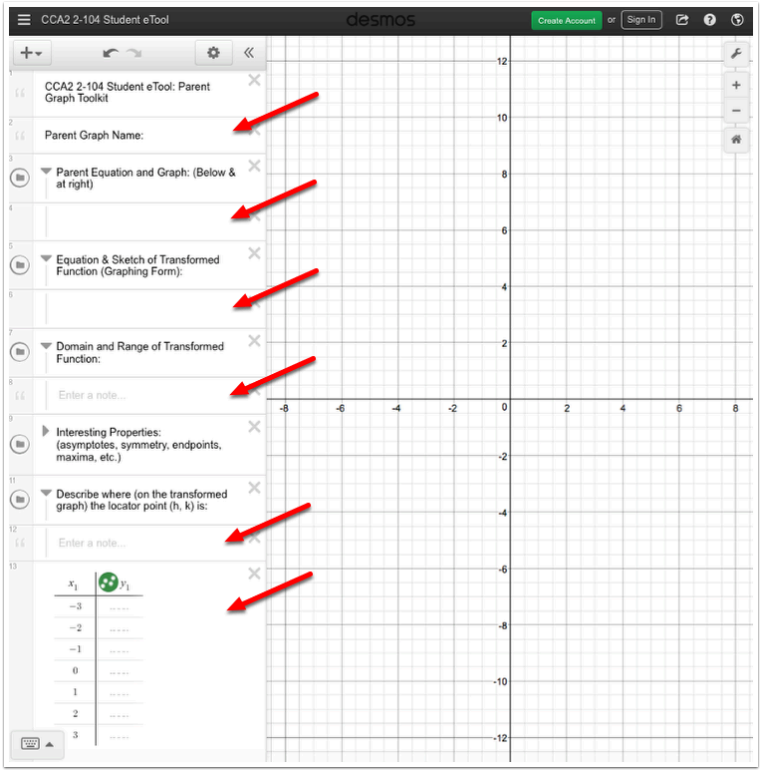
CCA2 2.2.2: 2-104 Student eTool (Desmos)

Click on the link below to access eTool.

2-104 Student eTool (Desmos)

Use this eTool to create toolkit entry for each of the parent graphs.

- Use the text fields to enter your expressions and explanations.
- Enter the x and y-values in the table.



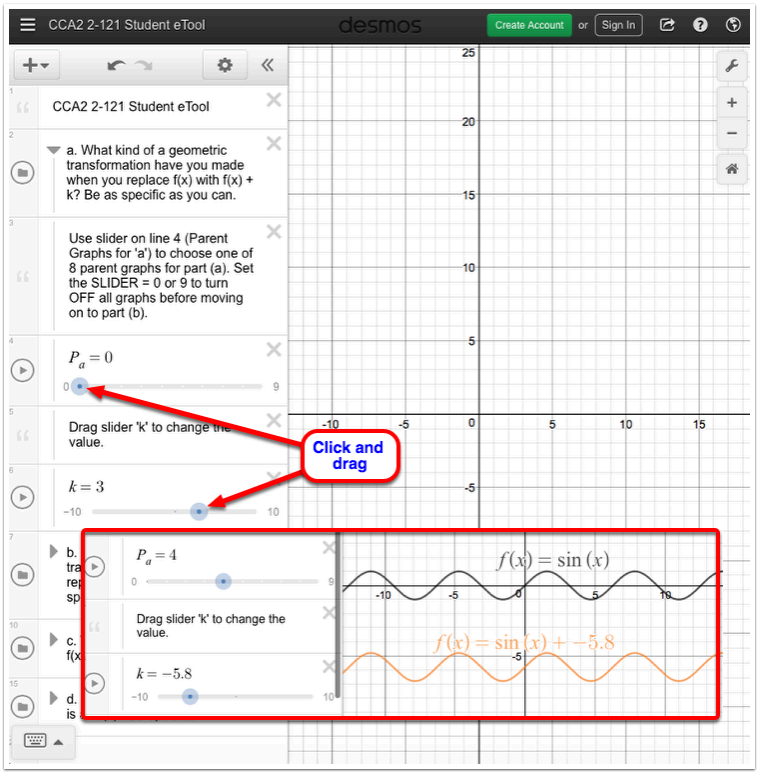
CCA2 2.2.3: 2-121 Student eTool (Desmos)

Click on the link below to access eTool

2-121 Student eTool (Desmos)

Use this eTool to explore the different geometric transformations.

- To view the graphs, click the blue point on the first slider (line 4) and drag (horizontally).
- To change the value, click the blue point on the second slider (line 6) and drag (horizontally).



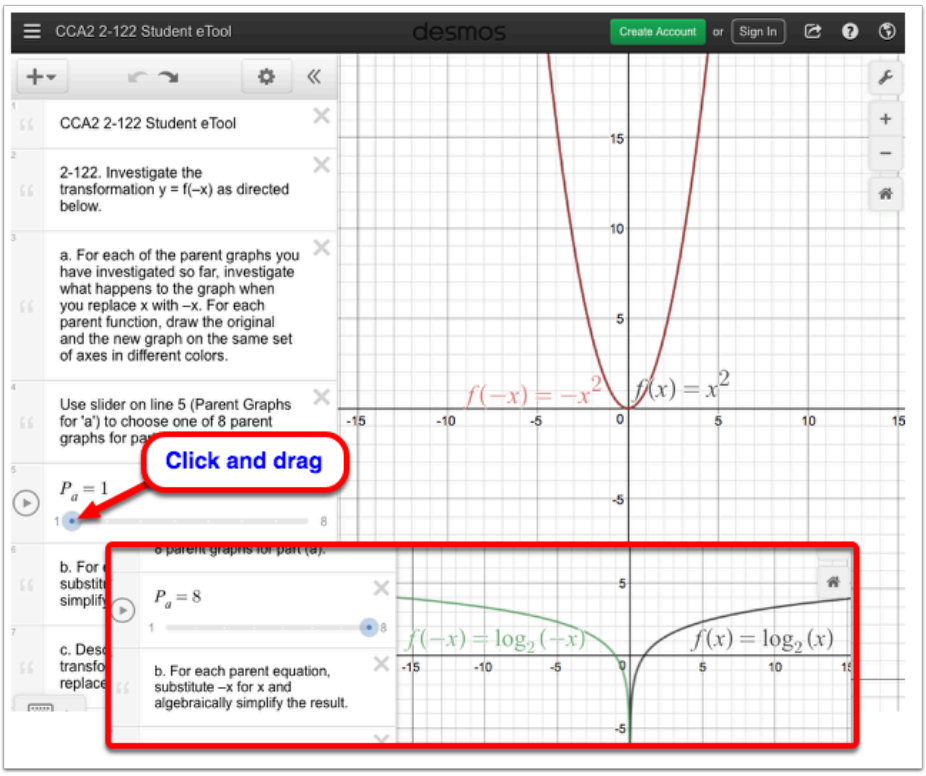
CCA2 2.2.3: 2-122 Student eTool (Desmos)

Click on the link below to access eTool.

2-122 Student eTool (Desmos)

Use this eTool to investigate the transformation of a given function.

- To view the graphs, click the blue point on the first slider (line 5) and drag (horizontally).



CCA2 2.2.5: 2-156 Student eTool (Desmos)

Click on the link below to access eTool.

2-156 Student eTool (Desmos)

Team Transformation Challenge

1. Find the y-values for *F*(*x*) for each part.

2. Click each of the colored points on the graph and drag to the correct location.

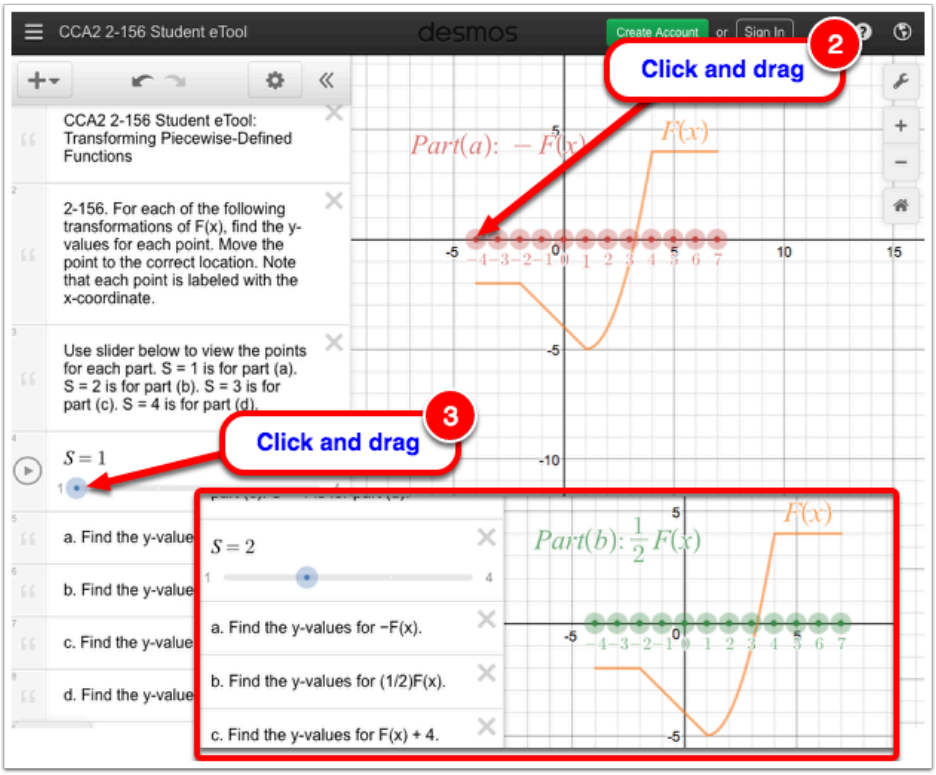
3. Click the blue point on the slider (line 4) and drag (horizontally) to view the next graph and repeat steps 1 and 2.

S = 1: Part (a)

S = 2: Part (b)

S = 3: Part (c)

S = 4: Part (d)



Chapter 3

CCA2 3.2.1: 3-57 Student eTools (Desmos)

Click on the links below to access each eTools.

3-57 f_1 Student eTool (Desmos)	*3-57 f_2 Student eTool* (Desmos)	*3-57 f_3 Student eTool* (Desmos)
3-57 f_4 Student eTool (Desmos)	*3-57 f_5 Student eTool* (Desmos)	*3-57 f_6 Student eTool* (Desmos)
3-57 f_7 Student eTool (Desmos)	*3-57 f_8 Student eTool* (Desmos)	*3-57 f_9 Student eTool* (Desmos)

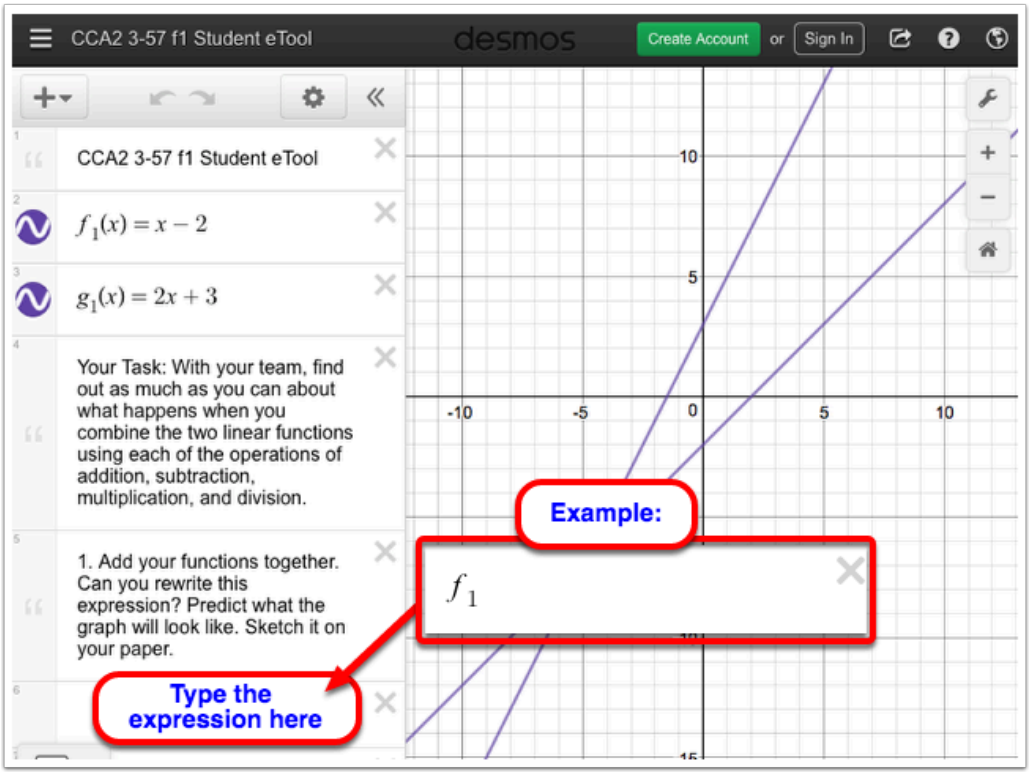
Use these eTools to investigate the relationship between the original two functions and the different results you get from adding, subtracting, multiplying, and dividing the two functions.

3-57 f1

- Enter the expression in each expression line.

  NOTE: To enter the subscript number, type "_<number>.

  i.e.: type "f_1" **Result:** f_1

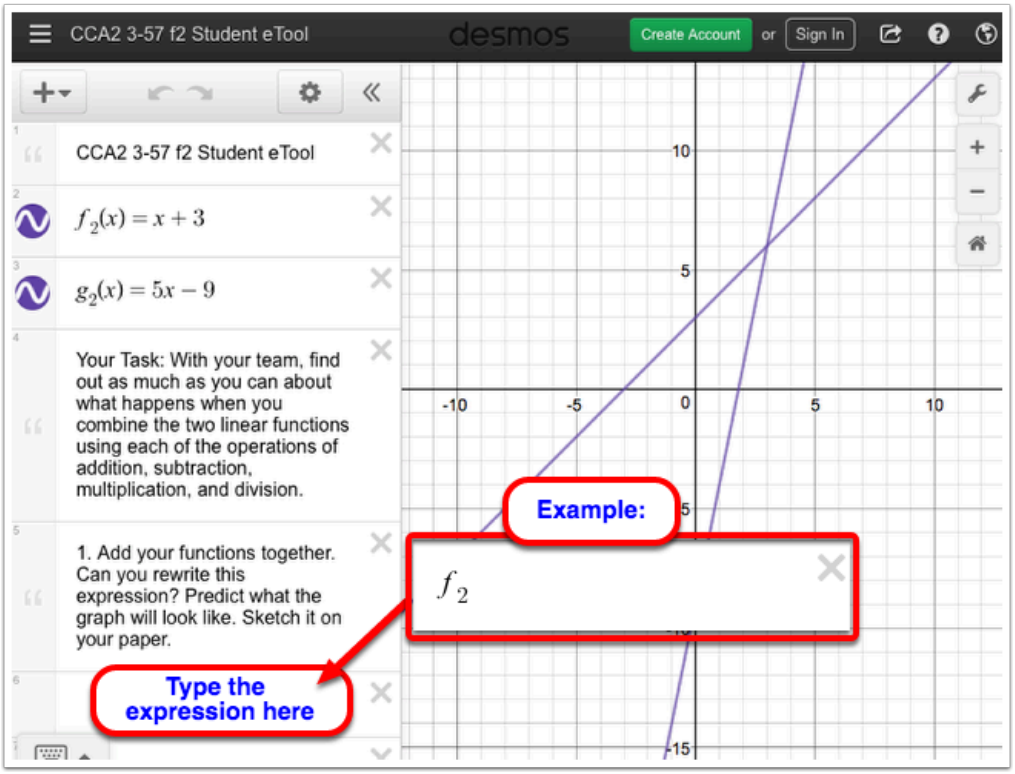


3-57 f2

- Enter the expression in each expression line.

NOTE: To enter the subscript number, type "_<number>.

i.e.: type "f_2" **Result:** f_2

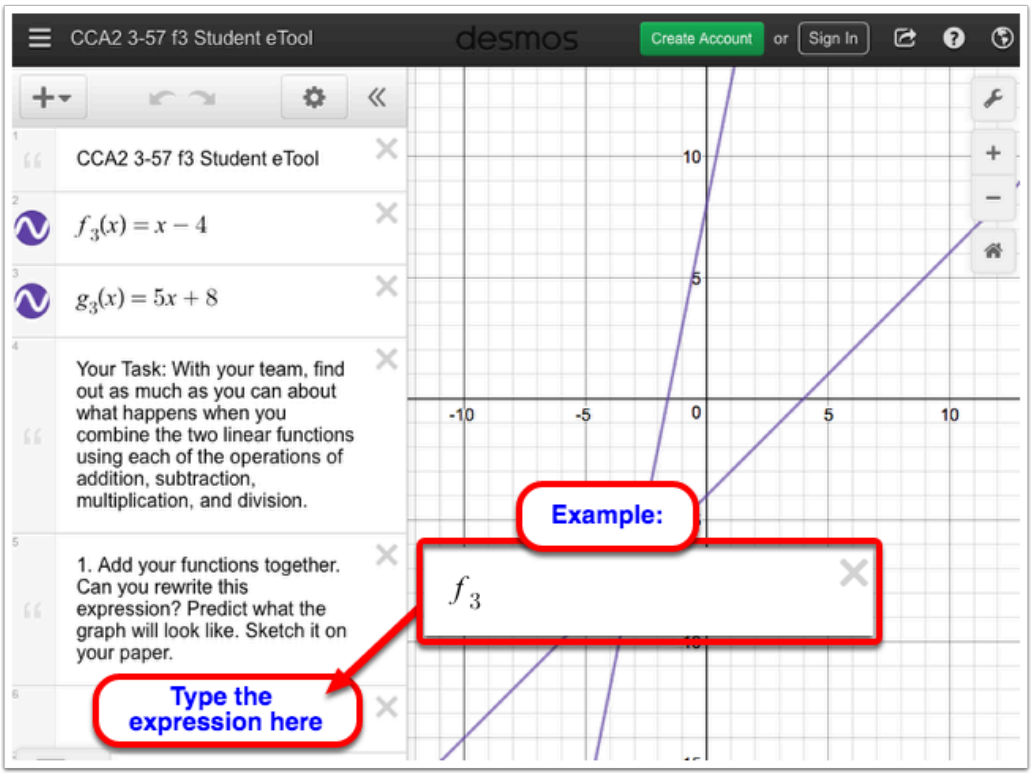


3-57 f3

- Enter the expression in each expression line.

  NOTE: To enter the subscript number, type "_<number>.

  i.e.: type "f_3" **Result:** f_3

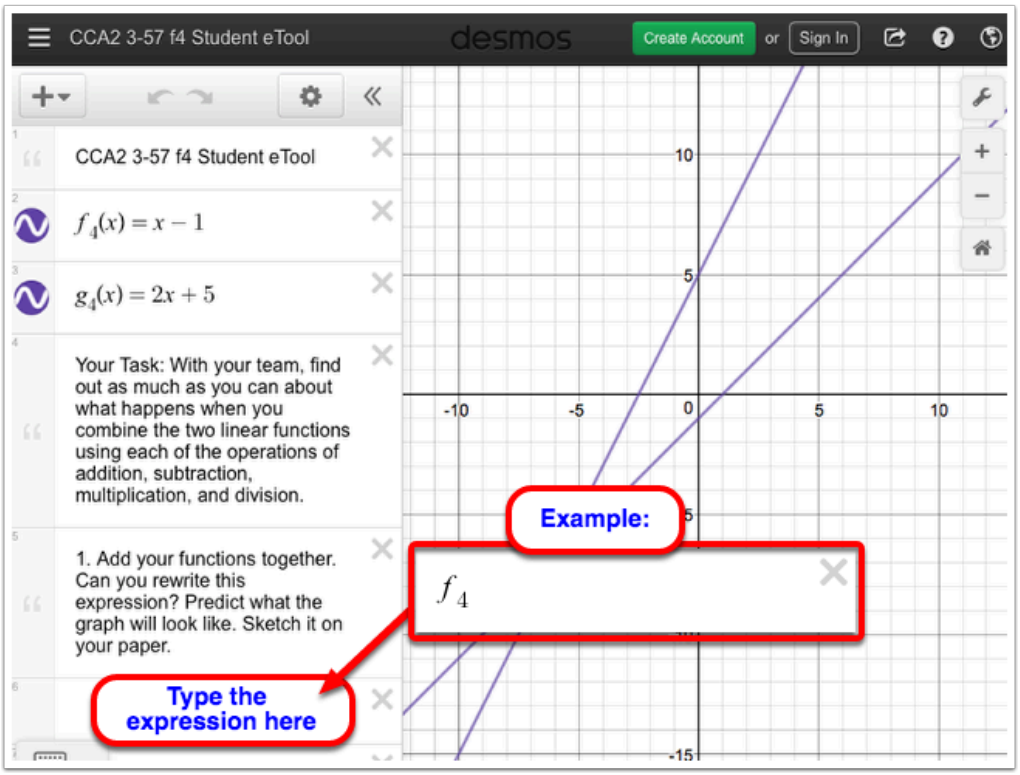


3-57 f4

- Enter the expression in each expression line.

  NOTE: To enter the subscript number, type "_<number>.

  i.e.: type "f_4" **Result:** f_4

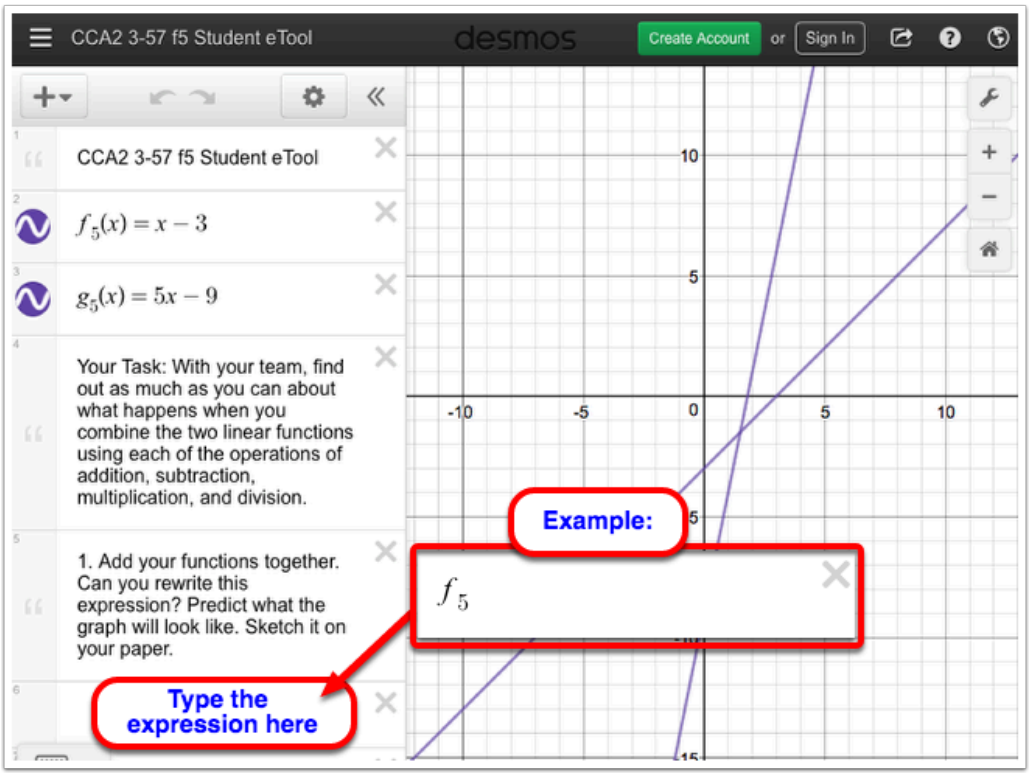


3-57 f5

- Enter the expression in each expression line.

  NOTE: To enter the subscript number, type "_<number>.

  i.e.: type "f_5" **Result:** f_5

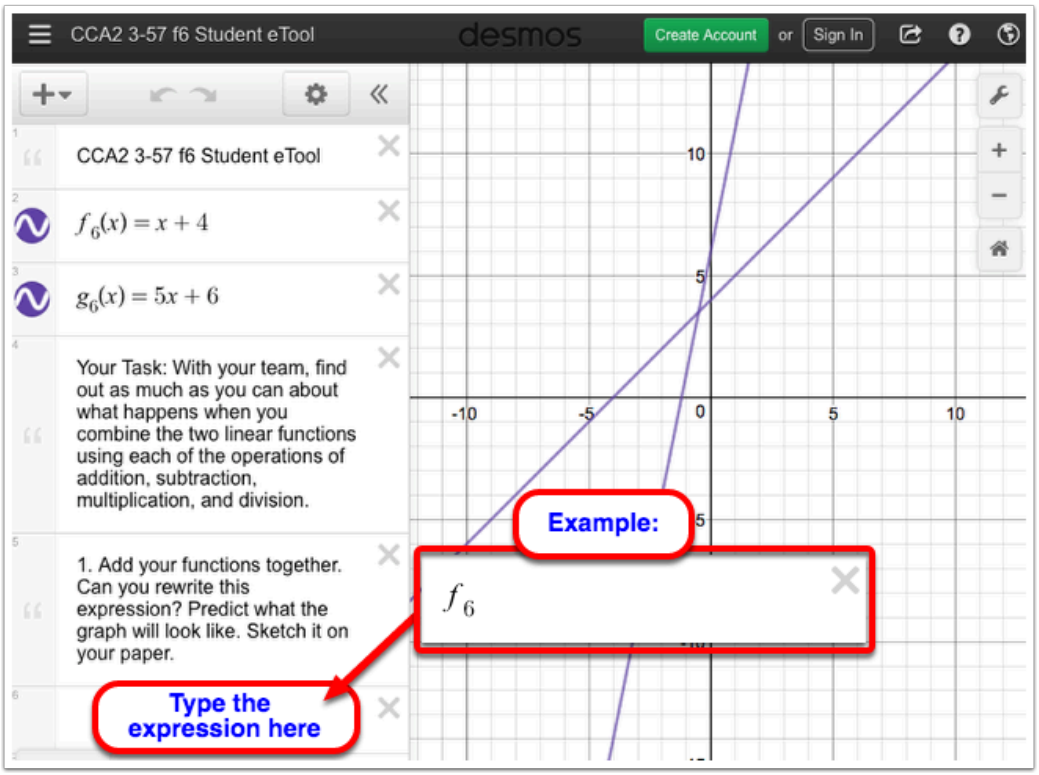


3-57 f6

- Enter the expression in each expression line.

  NOTE: To enter the subscript number, type "_<number>.

  i.e.: type "f_6" **Result:** f_6

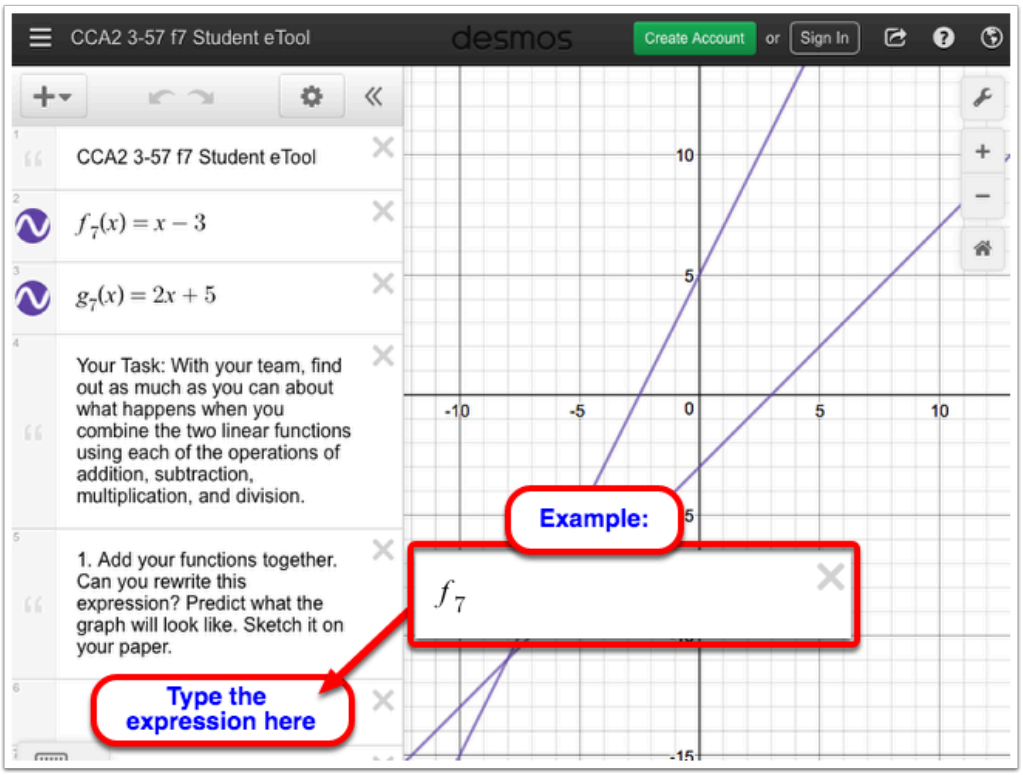


3-57 f7

- Enter the expression in each expression line.

  NOTE: To enter the subscript number, type "_<number>.

  i.e.: type "f_7" **Result:** f_7

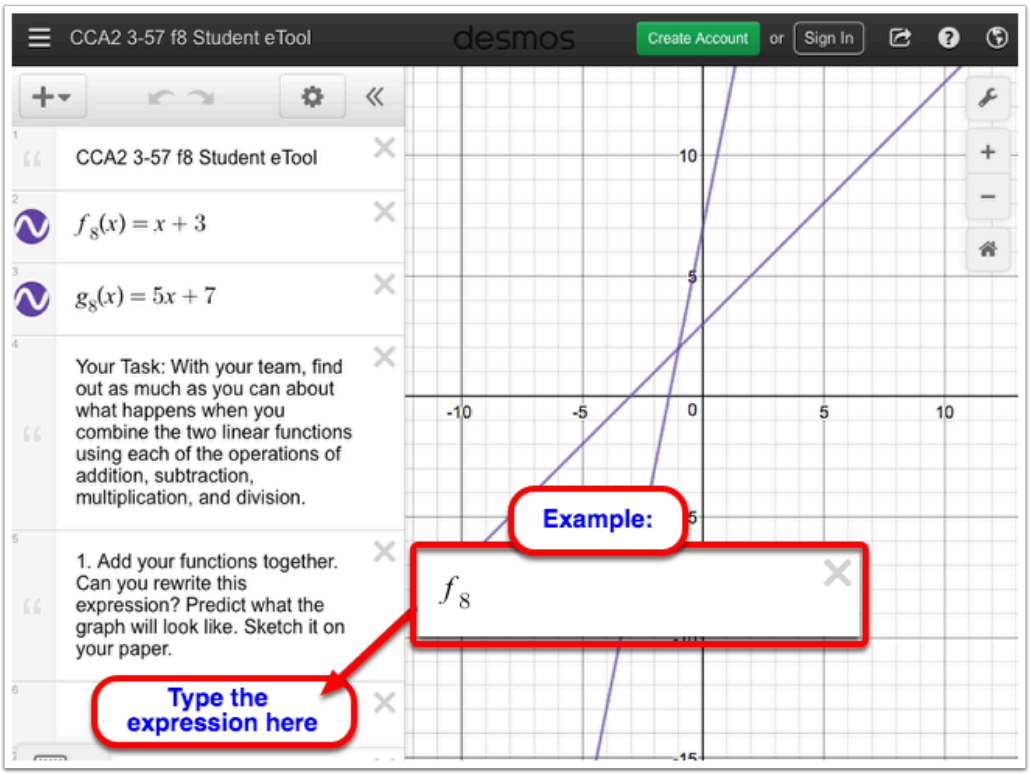


3-57 f8

- Enter the expression in each expression line.

  NOTE: To enter the subscript number, type "_<number>.

  i.e.: type "f_8" **Result:** f_8

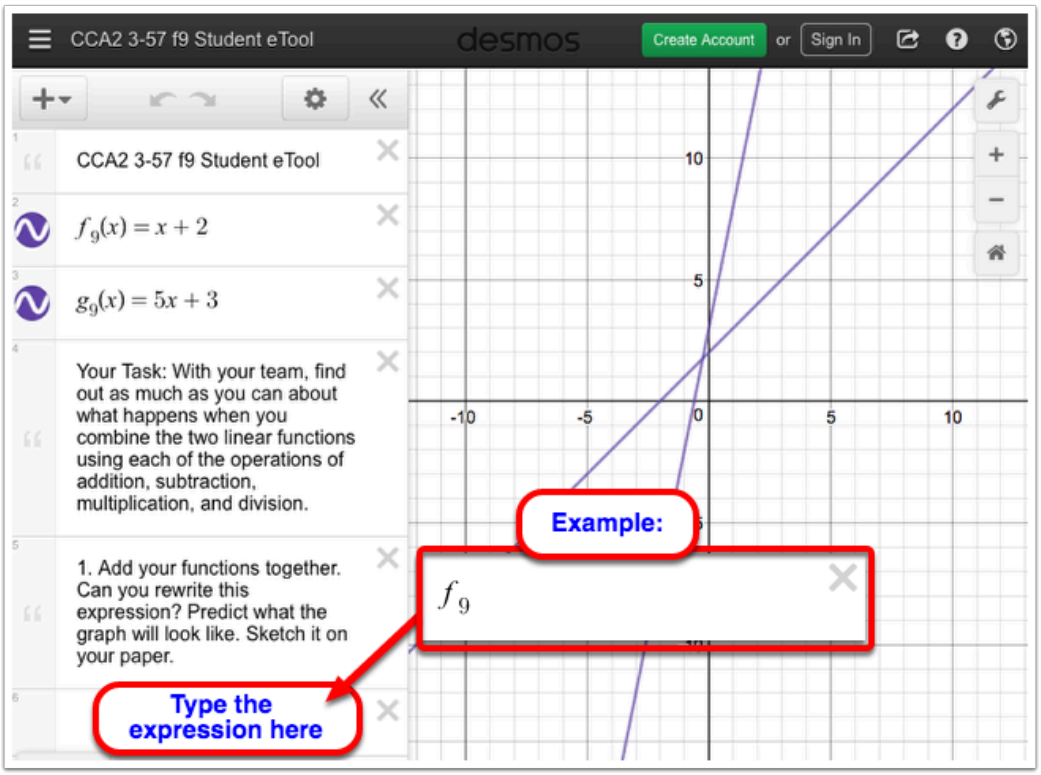


3-57 f9

- Enter the expression in each expression line.

  NOTE: To enter the subscript number, type "_<number>.

  i.e.: type "f_9" **Result:** f_9


CCA2 3-57 f9 Student eTool
desmos
Create Account
or
Sign In
CCA2 3-57 f9 Student eTool
$f_9(x) = x + 2$
$g_9(x) = 5x + 3$
Your Task: With your team, find out as much as you can about what happens when you combine the two linear functions using each of the operations of addition, subtraction, multiplication, and division.
1. Add your functions together. Can you rewrite this expression? Predict what the graph will look like. Sketch it on your paper.
Type the expression here
Example:
f_9
10
5
-10
-5
0
5
10

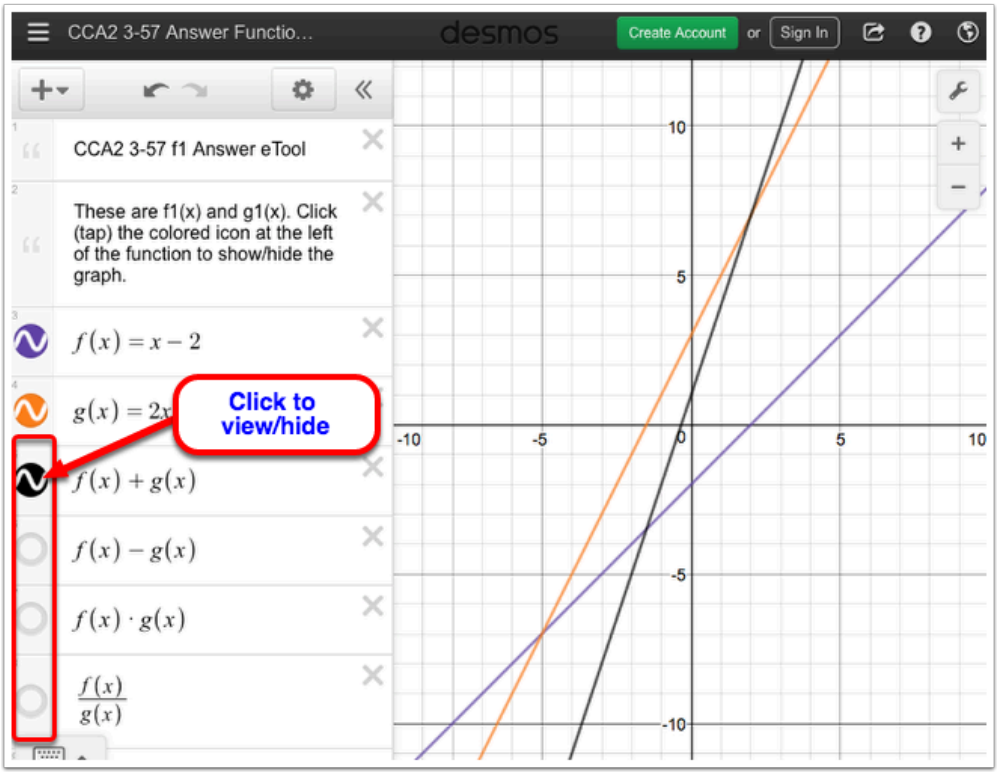
CCA2 3.2.1: 3-57 Answer eTools (Desmos)

Click on the links below to access each Answer eTools.

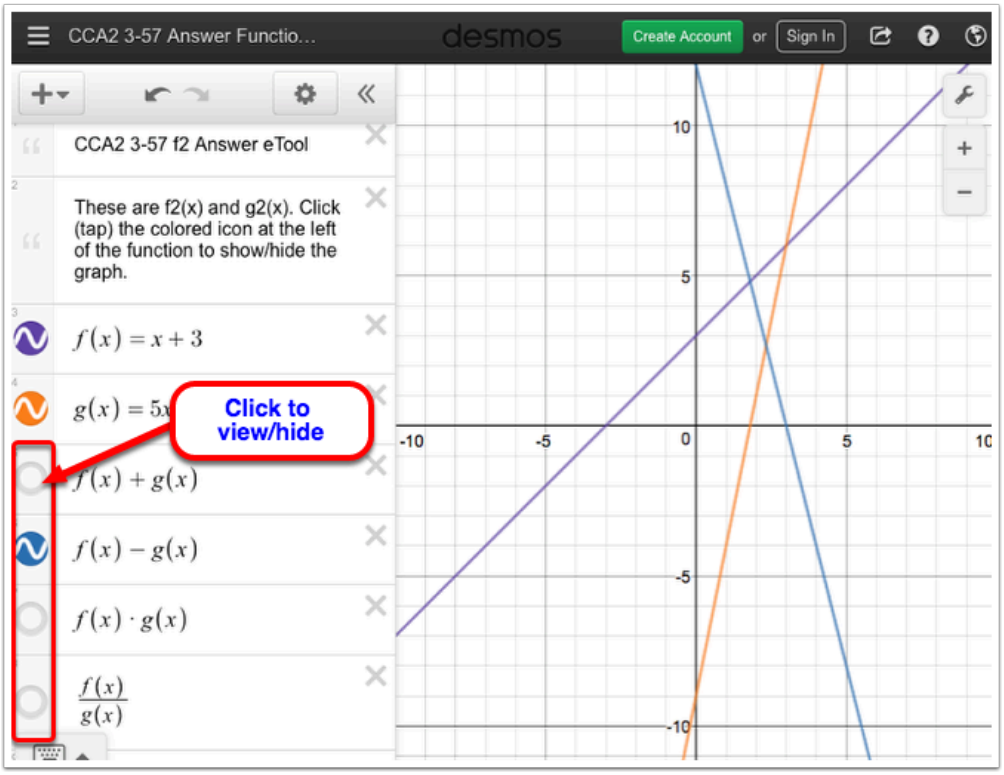
3-57 f_1 Answer eTool (Desmos)	3-57 f_2 Answer eTool (Desmos)	3-57 f_3 Answer eTool (Desmos)
3-57 f_4 Answe eTool (Desmos)	3-57 f_5 Answer eTool (Desmos)	3-57 f_6 Answer eTool (Desmos)
3-57 f_7 Answer eTool (Desmos)	3-57 f_8 Answer eTool (Desmos)	3-57 f_9 Answer eTool (Desmos)

Below are the answers for Functions 1 to 9.

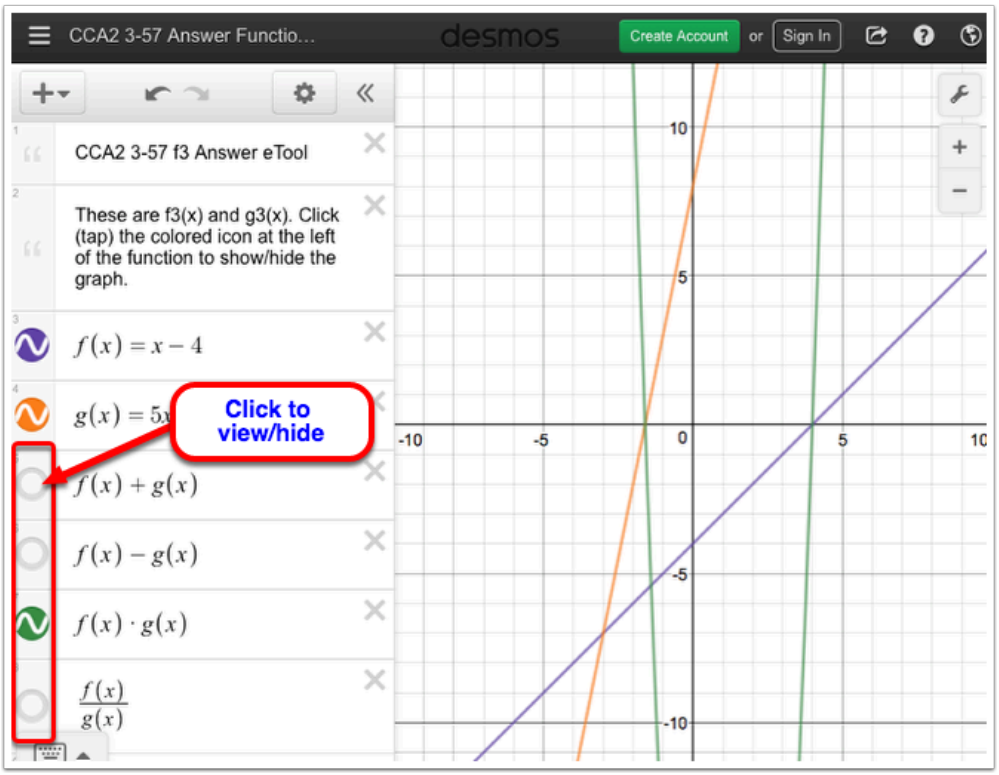
3-59 f1



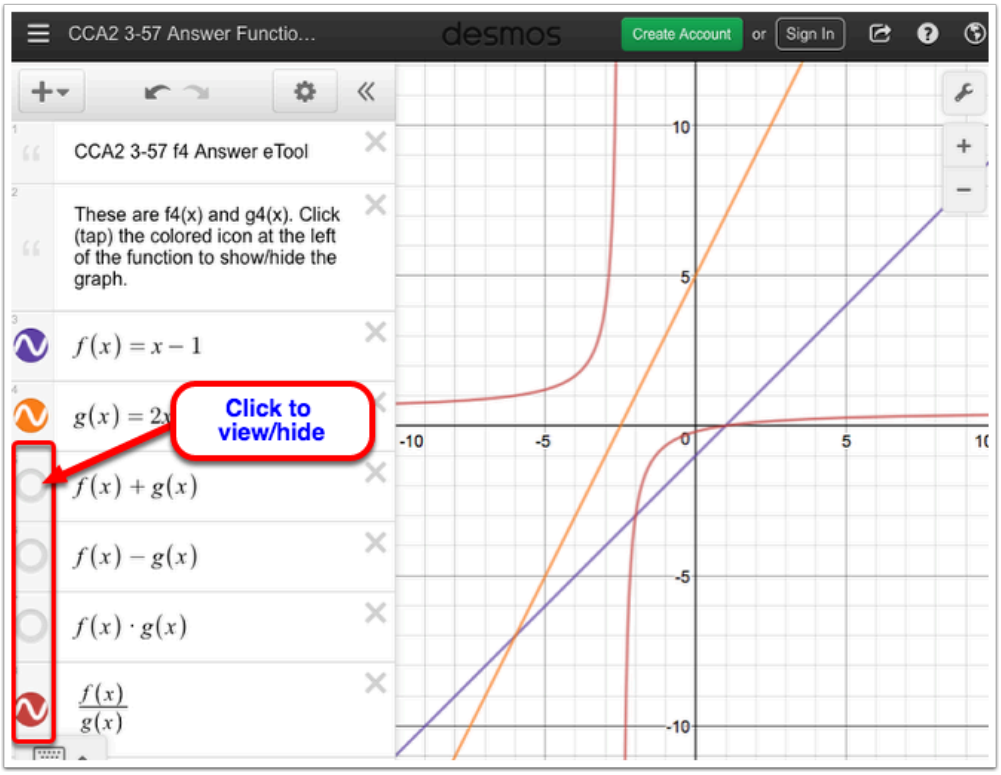
3-59 f2


CCA2 3-57 Answer Functio...
desmos
Create Account
or
Sign In
CCA2 3-57 f2 Answer eTool
These are f2(x) and g2(x). Click (tap) the colored icon at the left of the function to show/hide the graph.
$f(x) = x + 3$
$g(x) = 5x$
Click to view/hide
$f(x) + g(x)$
$f(x) - g(x)$
$f(x) \cdot g(x)$
$\frac{f(x)}{g(x)}$
10
5
-10
-5
0
5
10
-5
-10

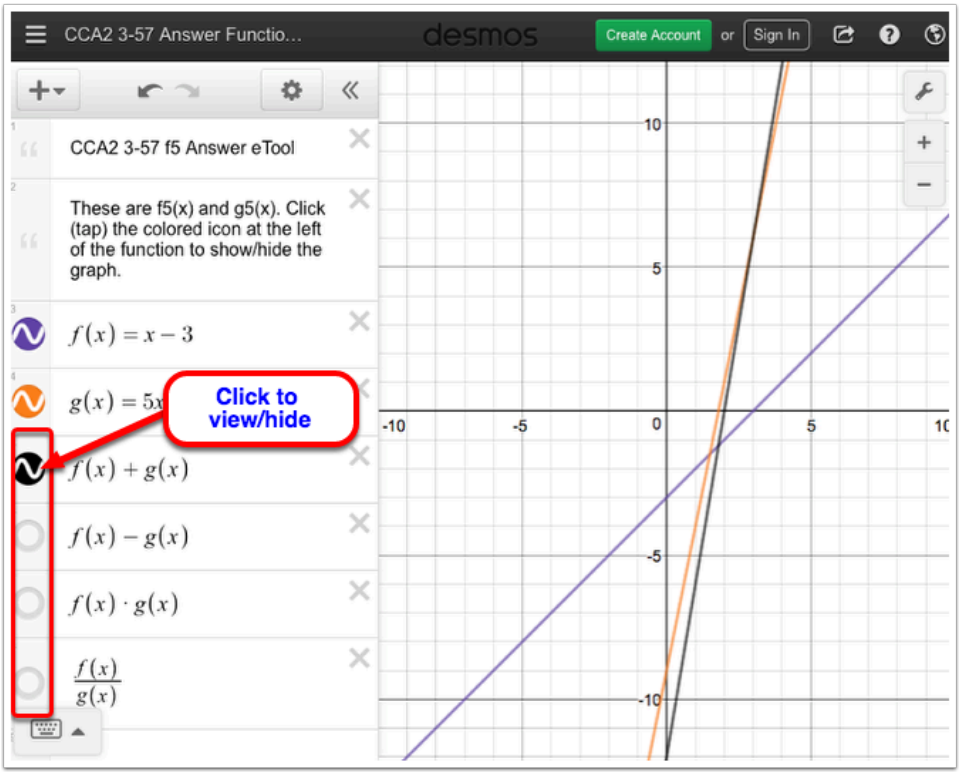
3-59 f3


CCA2 3-57 Answer Functio...
desmos
Create Account
or
Sign In
CCA2 3-57 f3 Answer eTool
These are f3(x) and g3(x). Click (tap) the colored icon at the left of the function to show/hide the graph.
$f(x) = x - 4$
$g(x) = 5x$
Click to view/hide
$f(x) + g(x)$
$f(x) - g(x)$
$f(x) \cdot g(x)$
$\frac{f(x)}{g(x)}$
10
5
-10
-5
0
5
10
-5
-10

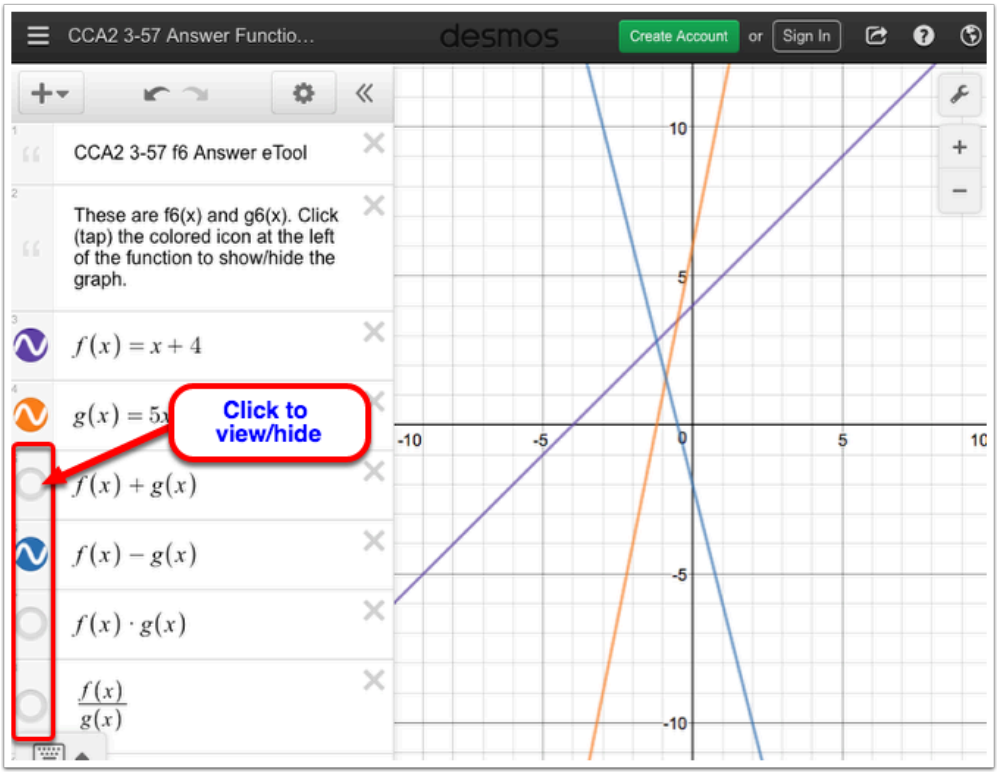
3-59 f4


CCA2 3-57 Answer Functio...
desmos
Create Account
or
Sign In
CCA2 3-57 f4 Answer eTool
These are f4(x) and g4(x). Click (tap) the colored icon at the left of the function to show/hide the graph.
$f(x) = x - 1$
$g(x) = 2x$
Click to view/hide
$f(x) + g(x)$
$f(x) - g(x)$
$f(x) \cdot g(x)$
$\frac{f(x)}{g(x)}$
10
5
-5
-10
-10
-5
0
5

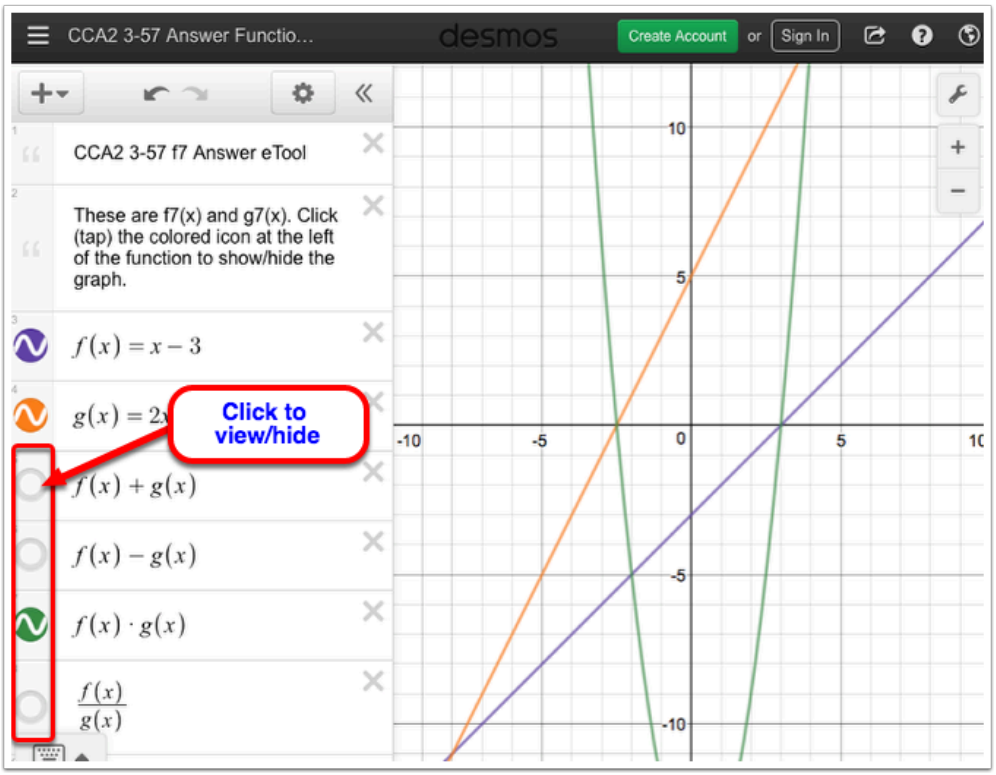
3-59 f5


CCA2 3-57 Answer Functio...
desmos
Create Account
or
Sign In
CCA2 3-57 f5 Answer eTool
These are f5(x) and g5(x). Click (tap) the colored icon at the left of the function to show/hide the graph.
$f(x) = x - 3$
$g(x) = 5x$
Click to view/hide
$f(x) + g(x)$
$f(x) - g(x)$
$f(x) \cdot g(x)$
$\frac{f(x)}{g(x)}$
10
5
-5
-10
-10
-5
0
5

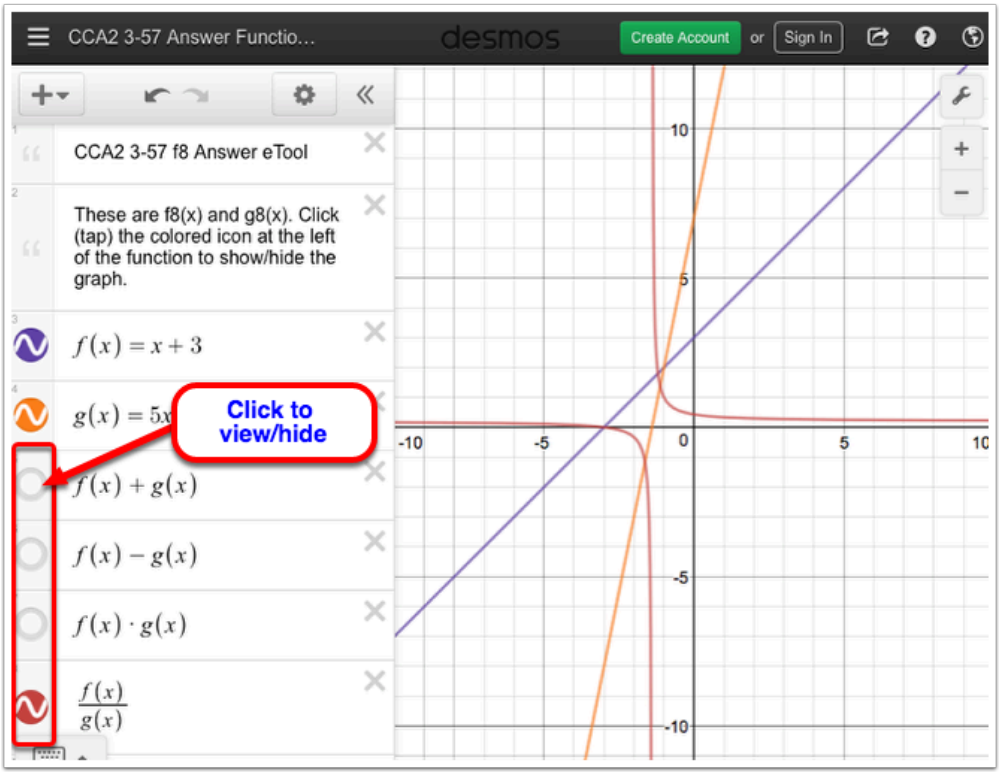
3-59 f6


CCA2 3-57 Answer Functio...
desmos
Create Account
or
Sign In
CCA2 3-57 f6 Answer eTool
These are f6(x) and g6(x). Click (tap) the colored icon at the left of the function to show/hide the graph.
$f(x) = x + 4$
$g(x) = 5x$
Click to view/hide
$f(x) + g(x)$
$f(x) - g(x)$
$f(x) \cdot g(x)$
$\frac{f(x)}{g(x)}$

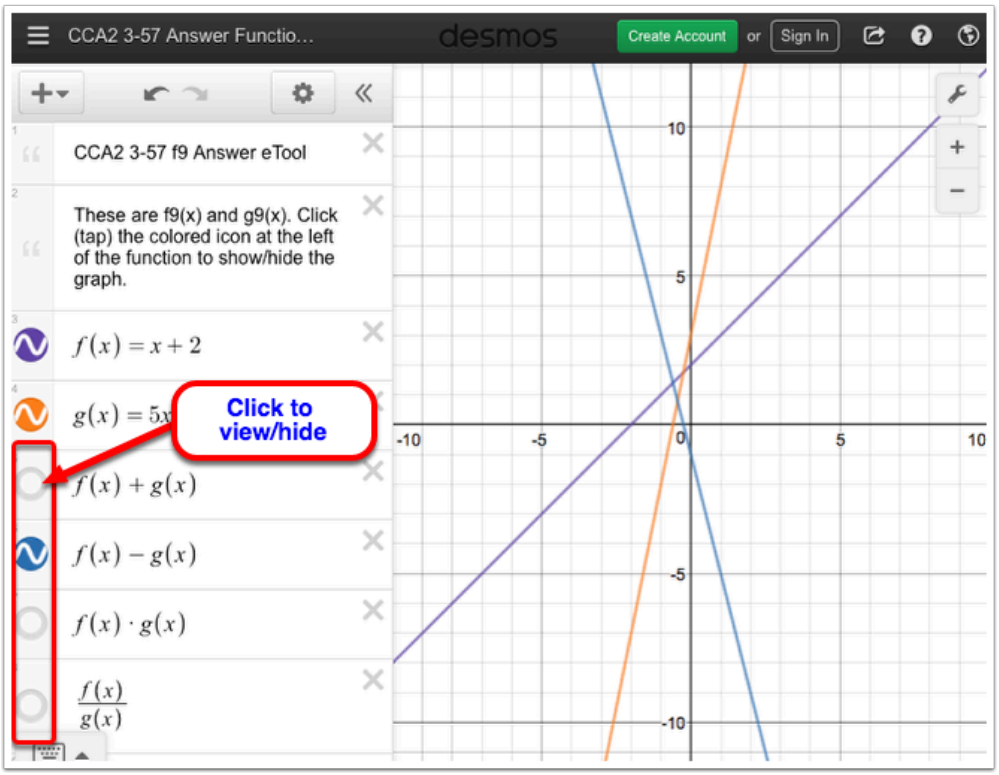
3-59 f7


CCA2 3-57 Answer Functio...
desmos
Create Account
or
Sign In
CCA2 3-57 f7 Answer eTool
These are f7(x) and g7(x). Click (tap) the colored icon at the left of the function to show/hide the graph.
$f(x) = x - 3$
$g(x) = 2x$
Click to view/hide
$f(x) + g(x)$
$f(x) - g(x)$
$f(x) \cdot g(x)$
$\frac{f(x)}{g(x)}$

3-59 f8


CCA2 3-57 Answer Functio...
desmos
Create Account
or
Sign In
CCA2 3-57 f8 Answer eTool
These are f8(x) and g8(x). Click (tap) the colored icon at the left of the function to show/hide the graph.
$f(x) = x + 3$
$g(x) = 5x$
Click to view/hide
$f(x) + g(x)$
$f(x) - g(x)$
$f(x) \cdot g(x)$
$\frac{f(x)}{g(x)}$
10
5
-5
-10
-10
-5
0
5
10

3-59 f9


CCA2 3-57 Answer Functio...
desmos
Create Account
or
Sign In
CCA2 3-57 f9 Answer eTool
These are f9(x) and g9(x). Click (tap) the colored icon at the left of the function to show/hide the graph.
$f(x) = x + 2$
$g(x) = 5x$
Click to view/hide
$f(x) + g(x)$
$f(x) - g(x)$
$f(x) \cdot g(x)$
$\frac{f(x)}{g(x)}$
10
5
-5
-10
-10
-5
0
5
10

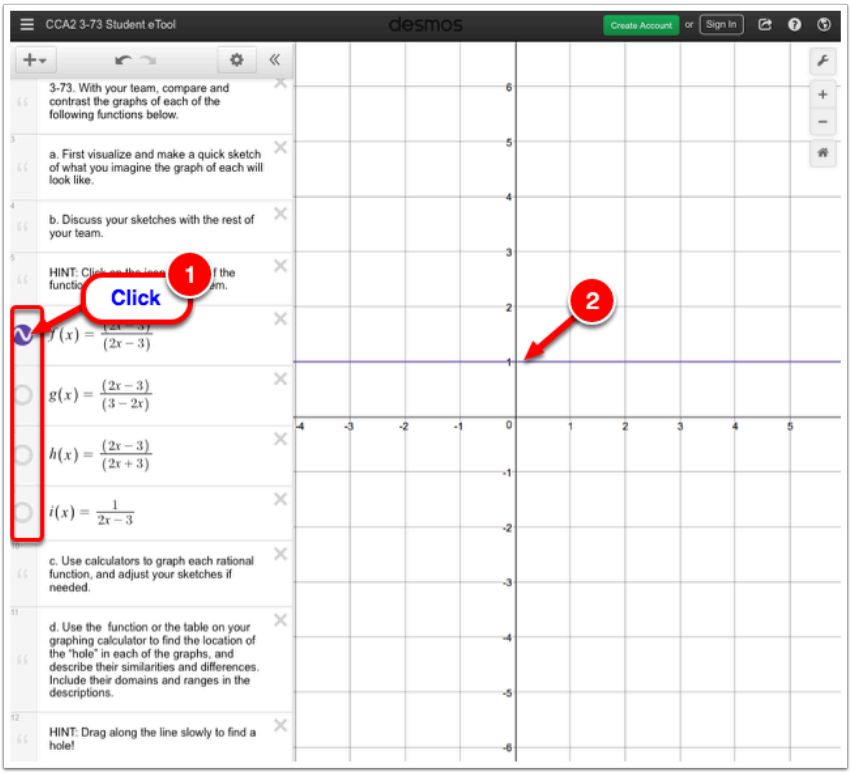
CCA2 3.2.2: 3-73 Student eTool (Desmos)

Click on the link below to access eTool.

3-73 Student eTool (Desmos)

Use this eTool to compare and contrast the graphs of each of the given functions.

1. Click on the icon in front of the functions below to show/hide them.
2. Click and drag along the line slowly to find a hole.



CCA2 3.2.5: 3-111 Student eTool (Desmos)

Click on the link below to access eTool.

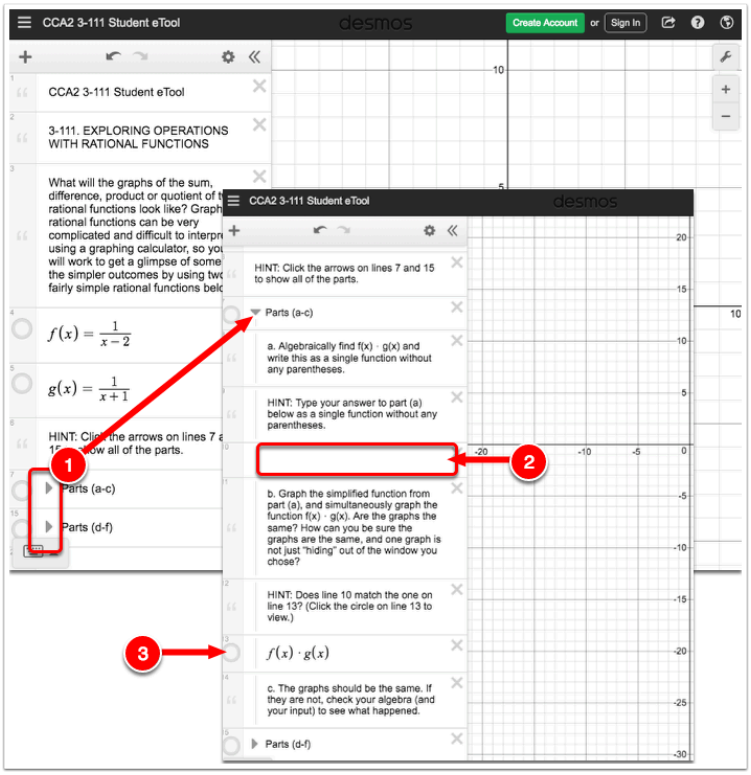
3-111 Student eTool (Desmos)

Explore the operations with rational functions using the eTool.

1. Click the arrows on lines 7 and 15 to show parts (a) through (f) of problem 3-11.

2. Type your your answers on the blank expression fields provided on lines 10, 19, 21, and 23.

3. Click the circles at the left on lines 13, 19, 21, and 23 to view each graph and compare your answers.



Chapter 4

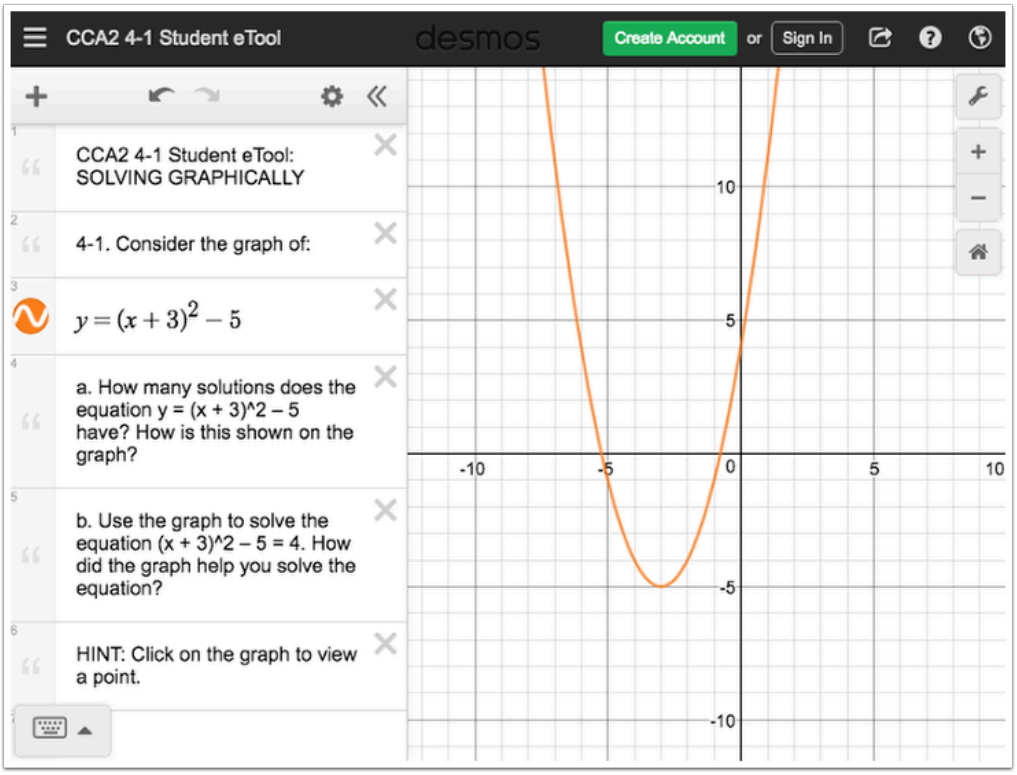
CCA2 4.1.1: 4-1 Student eTool (Desmos)

Click on the link below to access eTool.

4-1 Student eTool (Desmos)

Use this eTool to solve the equation:

$$(x + 3)^2 - 5 = 4$$



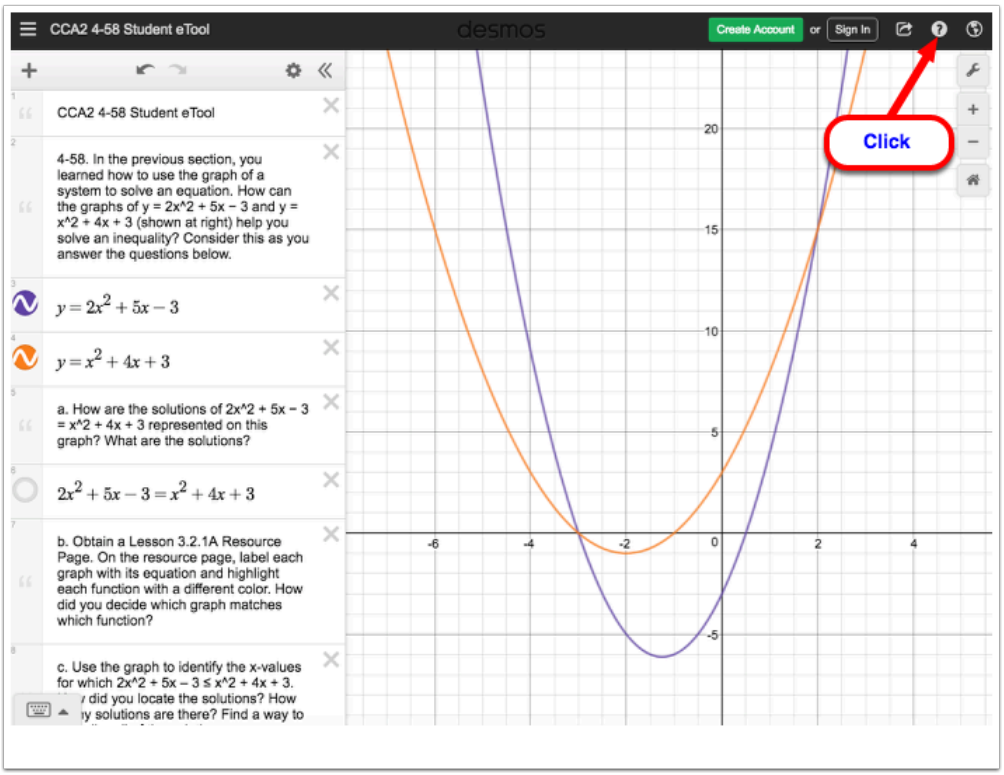
CCA2 4.2.1: 4-58 Student eTool (Desmos)

Click on the link below to access eTool

4-58 Student eTool

Use this eTool to learn more about Inequalities.

Note: For more inforation about Desmos and Inequalities, click "?" icon.

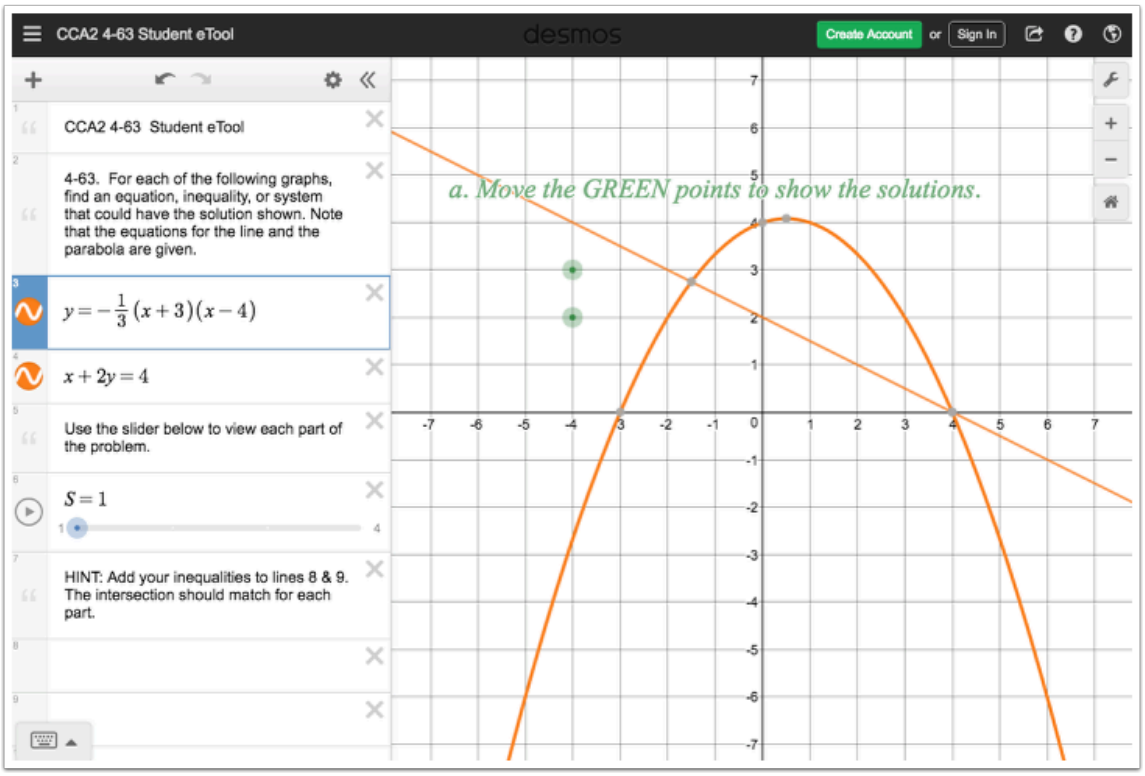


CCA2 4.2.1: 4-63 Student eTool (Desmos)

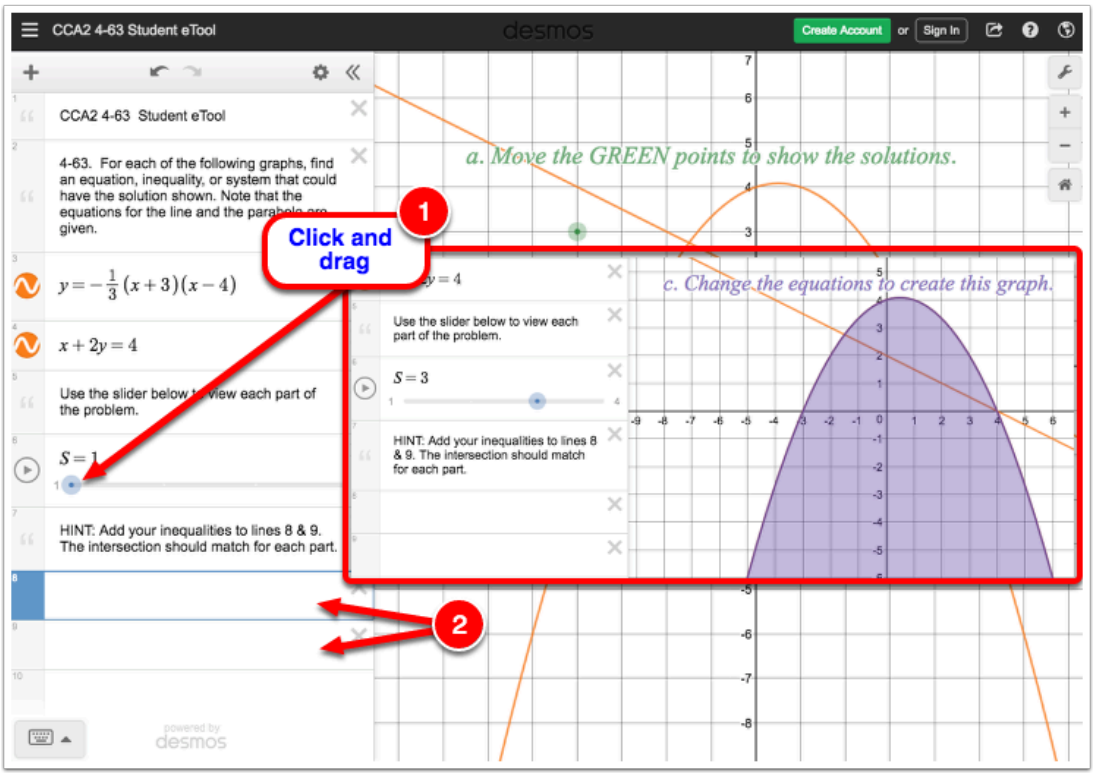
Click on the link below to access eTool.

4-63 Student eTool (Desmos)

Use this eTool to view the graphs for each part of problem 4-63.



1. Click and drag the blue point on the slider to view each part of the problem.
2. Enter your inequalities in lines 8 and 9.

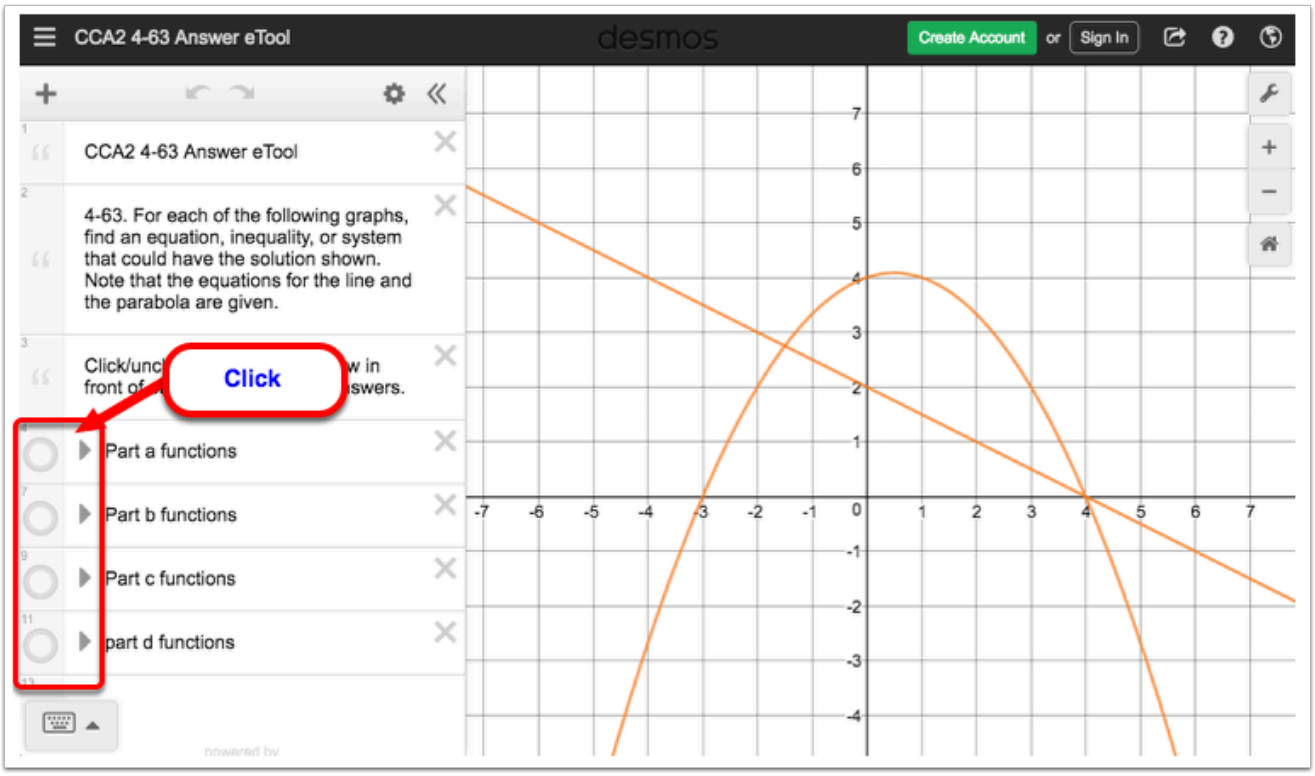

CCA2 4-63 Student eTool
desmos
Create Account
or
Sign In
CCA2 4-63 Student eTool
4-63. For each of the following graphs, find an equation, inequality, or system that could have the solution shown. Note that the equations for the line and the parabola are given.
$y=-\frac{1}{3}(x+3)(x-4)$
$x+2y=4$
Use the slider below to view each part of the problem.
$S=1$
HINT: Add your inequalities to lines 8 & 9. The intersection should match for each part.
powered by desmos
a. Move the GREEN points to show the solutions.
Click and drag
1
$y=4$
Use the slider below to view each part of the problem.
$S=3$
HINT: Add your inequalities to lines 8 & 9. The intersection should match for each part.
c. Change the equations to create this graph.
2

CCA2 4.2.1: 4-63 Answer eTool (Desmos)

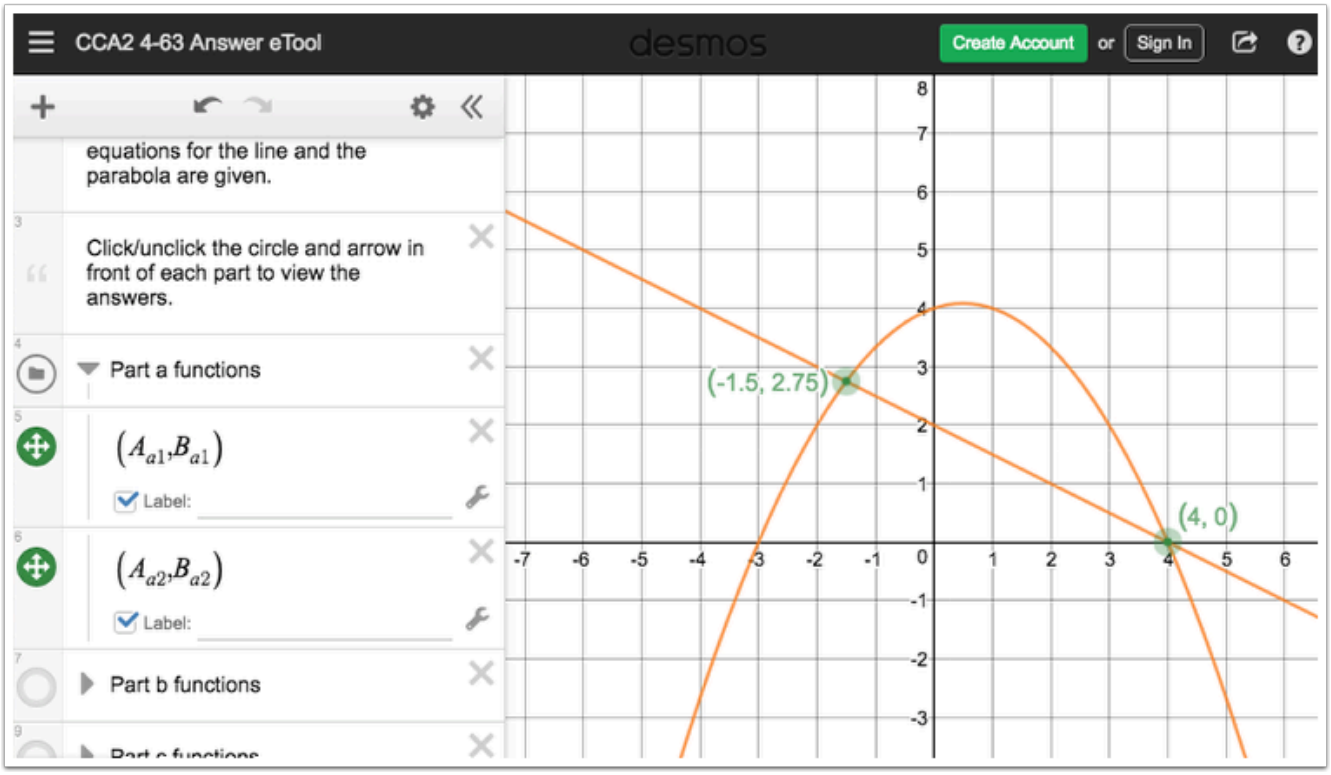
Click on the link below to access the eTool.

4-63 Answer eTool (Desmos)

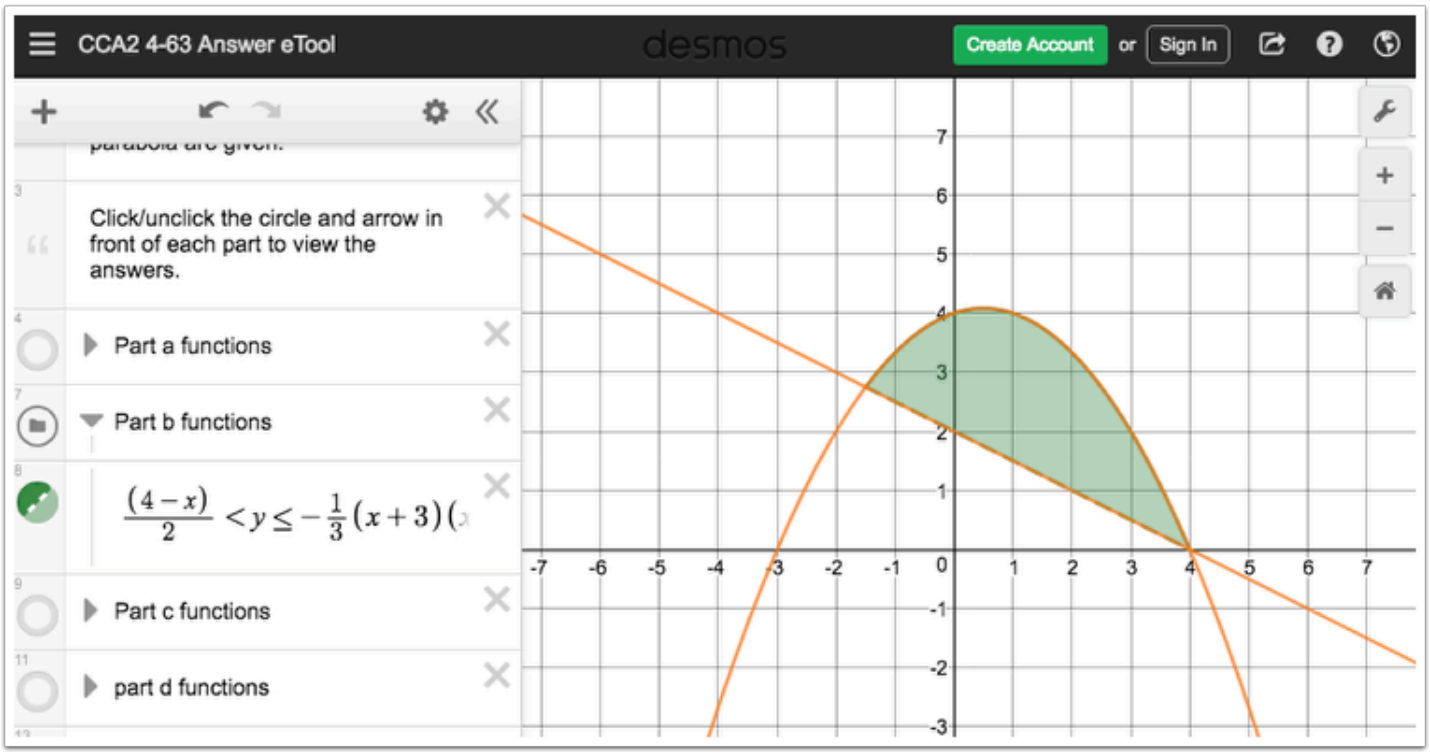
Click the circle and arrow to the left of parts (a) to (d) to view/hide the answers.



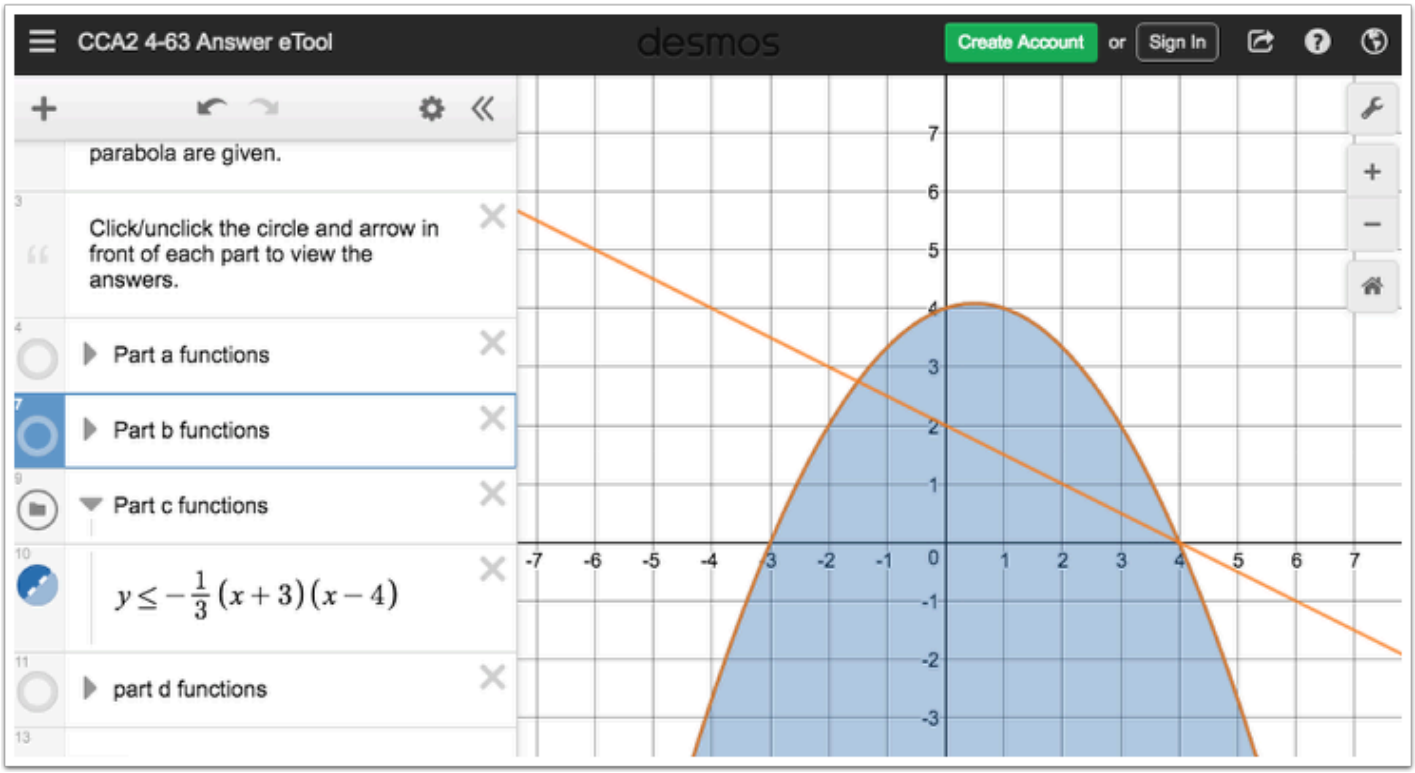
4-63a Answer:



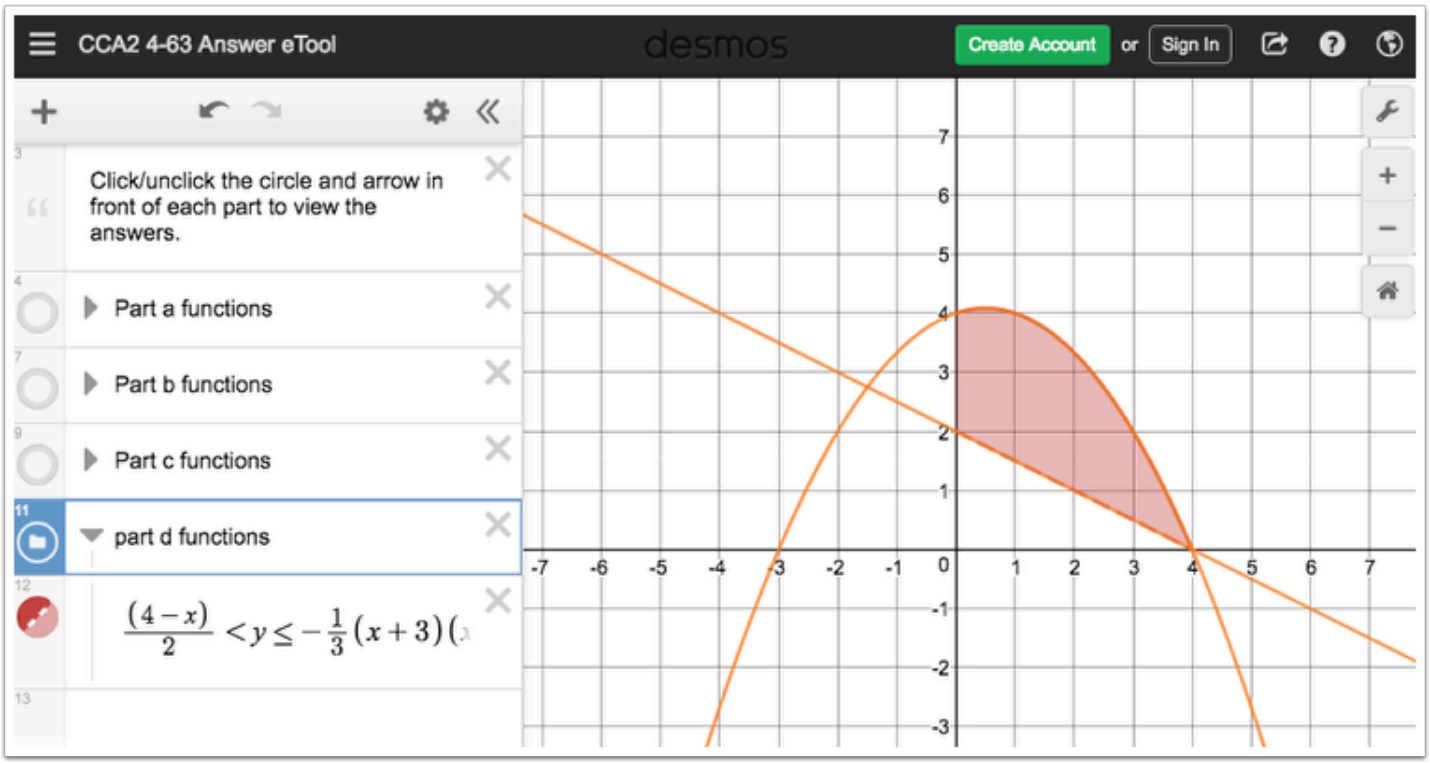
4-63b Answer:



4-63c Answer:



4-63c Answer:

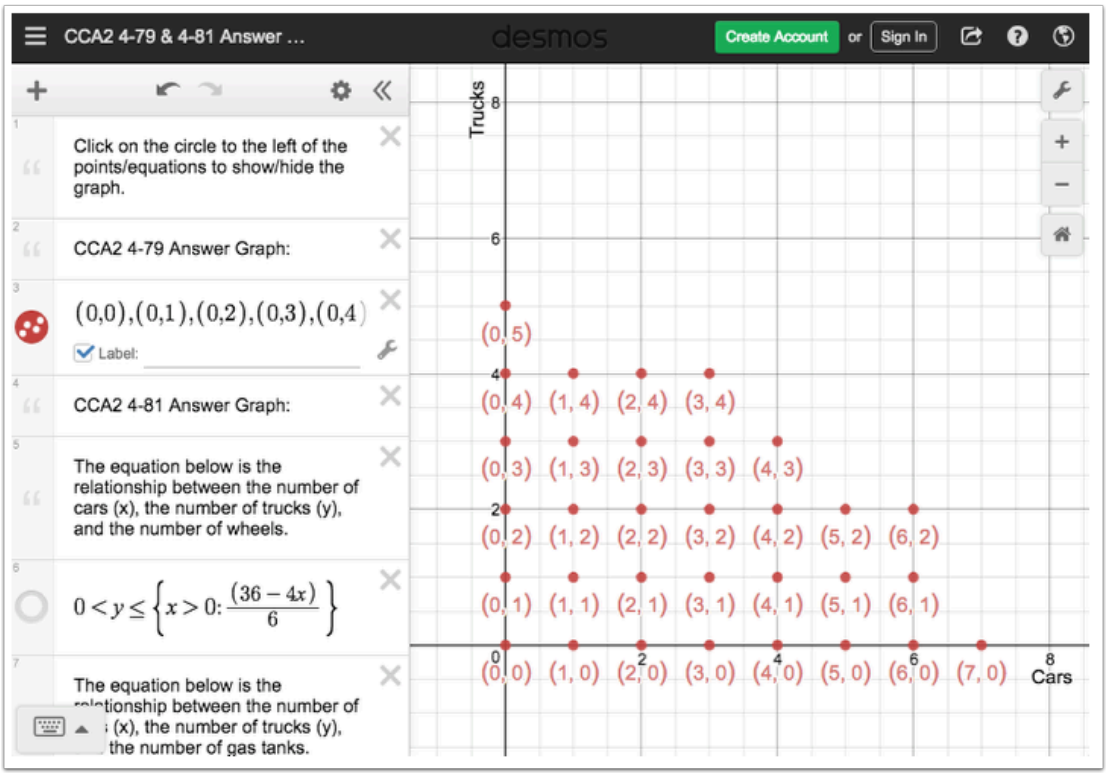


CCA2 4.2.2: 4-79 & 4-81 Answer eTool (Desmos)

Click on the link below to access the eTool.

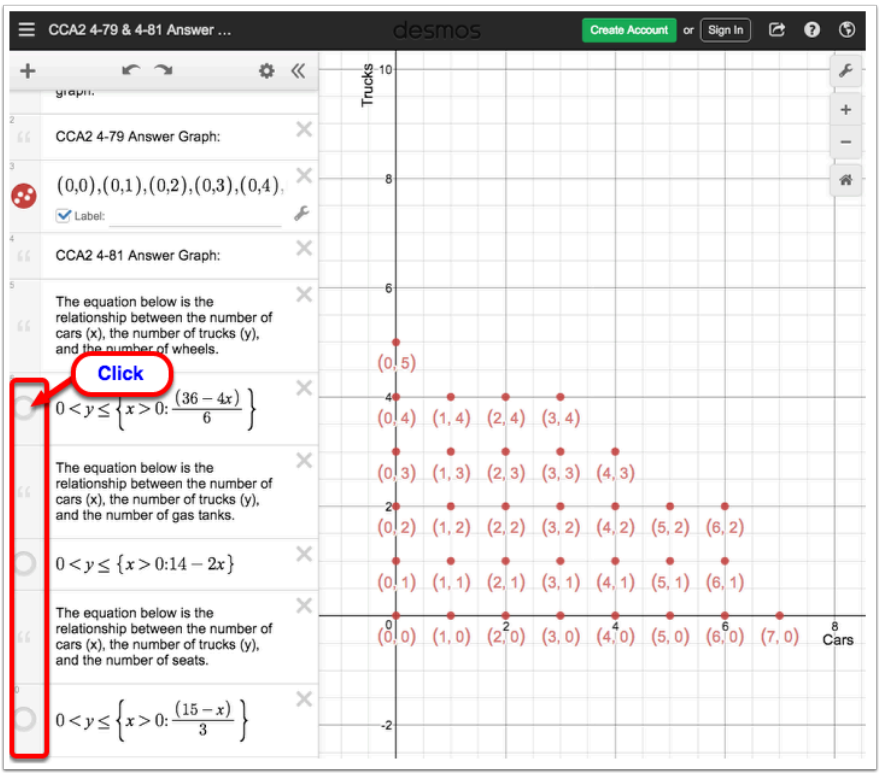
4-79 & 4-81 Answer eTool (Desmos)

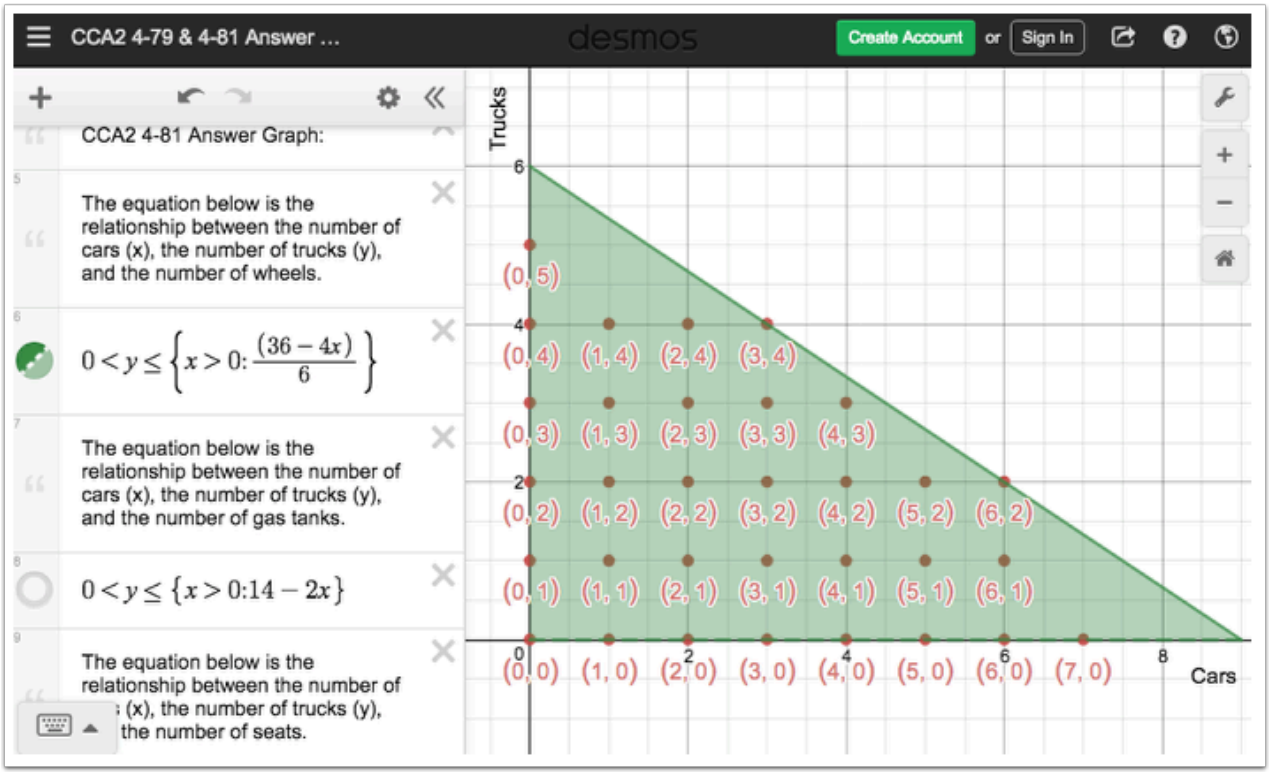
4-79 Answer Graph:

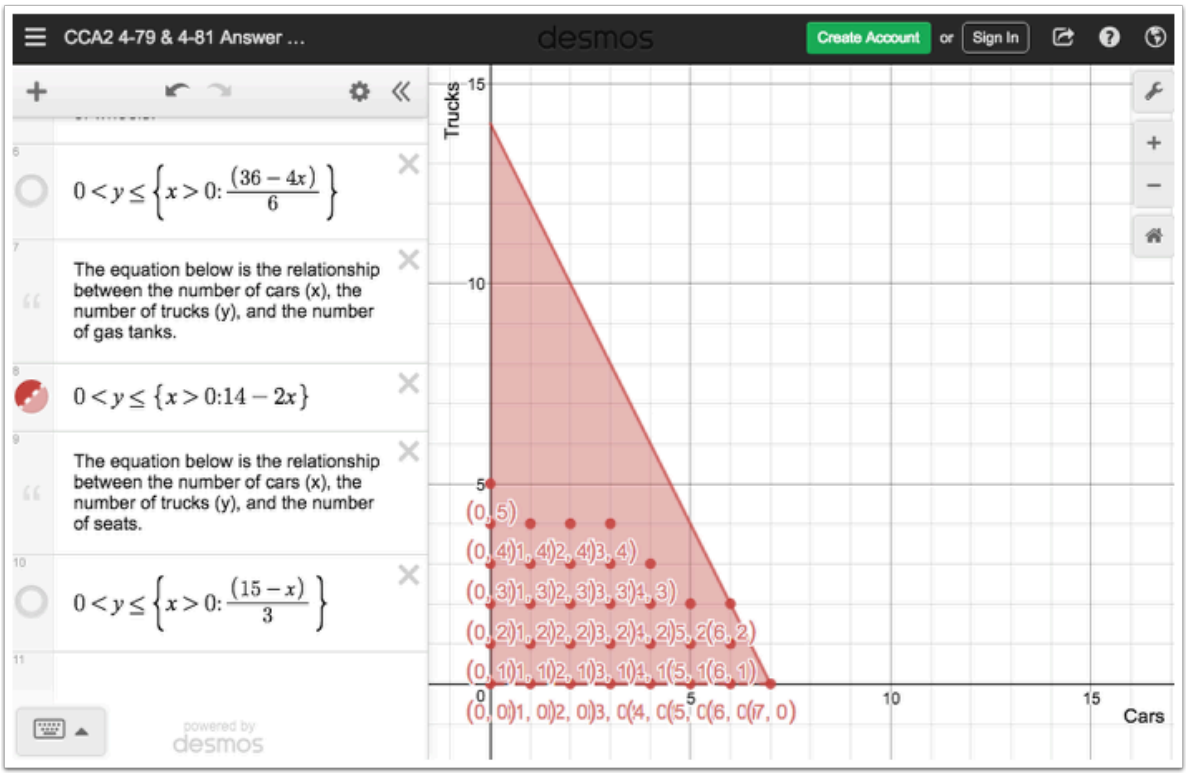


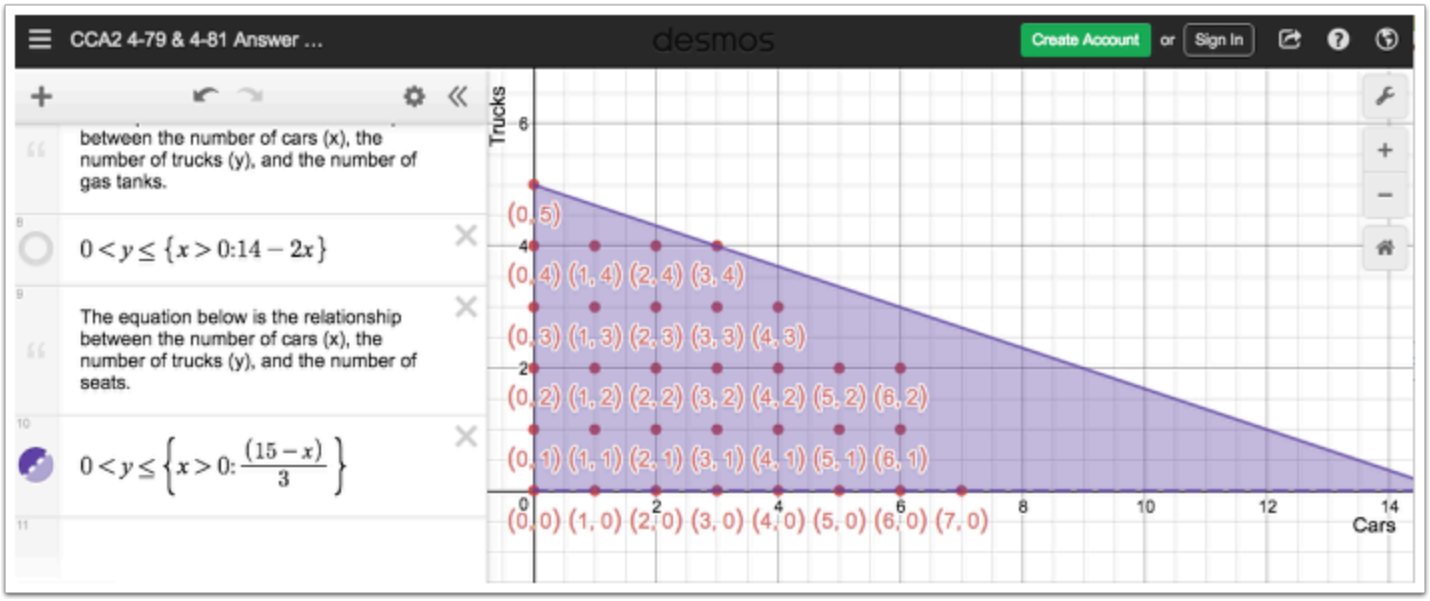
4-81 Answer Graph:

- **Click the circle to the left of lines 6, 8, and 10 to view/hide the answers.**


CCA2 4-79 & 4-81 Answer ...
desmos
Create Account
or
Sign In
CCA2 4-79 Answer Graph:
(0,0),(0,1),(0,2),(0,3),(0,4)
Label:
CCA2 4-81 Answer Graph:
The equation below is the relationship between the number of cars (x), the number of trucks (y), and the number of wheels.
Click
$0<y\le\left\{x>0:\frac{(36-4x)}{6}\right\}$
The equation below is the relationship between the number of cars (x), the number of trucks (y), and the number of gas tanks.
$0<y\le\{x>0:14-2x\}$
The equation below is the relationship between the number of cars (x), the number of trucks (y), and the number of seats.
$0<y\le\left\{x>0:\frac{(15-x)}{3}\right\}$
Trucks
Cars
(0, 5)
(0, 4) (1, 4) (2, 4) (3, 4)
(0, 3) (1, 3) (2, 3) (3, 3) (4, 3)
(0, 2) (1, 2) (2, 2) (3, 2) (4, 2) (5, 2) (6, 2)
(0, 1) (1, 1) (2, 1) (3, 1) (4, 1) (5, 1) (6, 1)
(0, 0) (1, 0) (2, 0) (3, 0) (4, 0) (5, 0) (6, 0) (7, 0)


CCA2 4-79 & 4-81 Answer ...
desmos
Create Account
or
Sign In
CCA2 4-81 Answer Graph:
The equation below is the relationship between the number of cars (x), the number of trucks (y), and the number of wheels.
$0<y\le\left\{x>0:\frac{(36-4x)}{6}\right\}$
The equation below is the relationship between the number of cars (x), the number of trucks (y), and the number of gas tanks.
$0<y\le\{x>0:14-2x\}$
the number of seats.
Trucks
Cars
(0, 5)
(0, 4) (1, 4) (2, 4) (3, 4)
(0, 3) (1, 3) (2, 3) (3, 3) (4, 3)
(0, 2) (1, 2) (2, 2) (3, 2) (4, 2) (5, 2) (6, 2)
(0, 1) (1, 1) (2, 1) (3, 1) (4, 1) (5, 1) (6, 1)
(0, 0) (1, 0) (2, 0) (3, 0) (4, 0) (5, 0) (6, 0) (7, 0)


CCA2 4-79 & 4-81 Answer ...
desmos
Create Account
or
Sign In
$0 < y \leq \left\{x > 0: \frac{(36-4x)}{6}\right\}$
The equation below is the relationship between the number of cars (x), the number of trucks (y), and the number of gas tanks.
$0 < y \leq \{x > 0: 14-2x\}$
The equation below is the relationship between the number of cars (x), the number of trucks (y), and the number of seats.
$0 < y \leq \left\{x > 0: \frac{(15-x)}{3}\right\}$
powered by desmos
Trucks
Cars
(0, 5)
(0, 4) (1, 4) (2, 4) (3, 4)
(0, 3) (1, 3) (2, 3) (3, 3) (4, 3)
(0, 2) (1, 2) (2, 2) (3, 2) (4, 2) (5, 2) (6, 2)
(0, 1) (1, 1) (2, 1) (3, 1) (4, 1) (5, 1) (6, 1)
(0, 0) (1, 0) (2, 0) (3, 0) (4, 0) (5, 0) (6, 0) (7, 0)

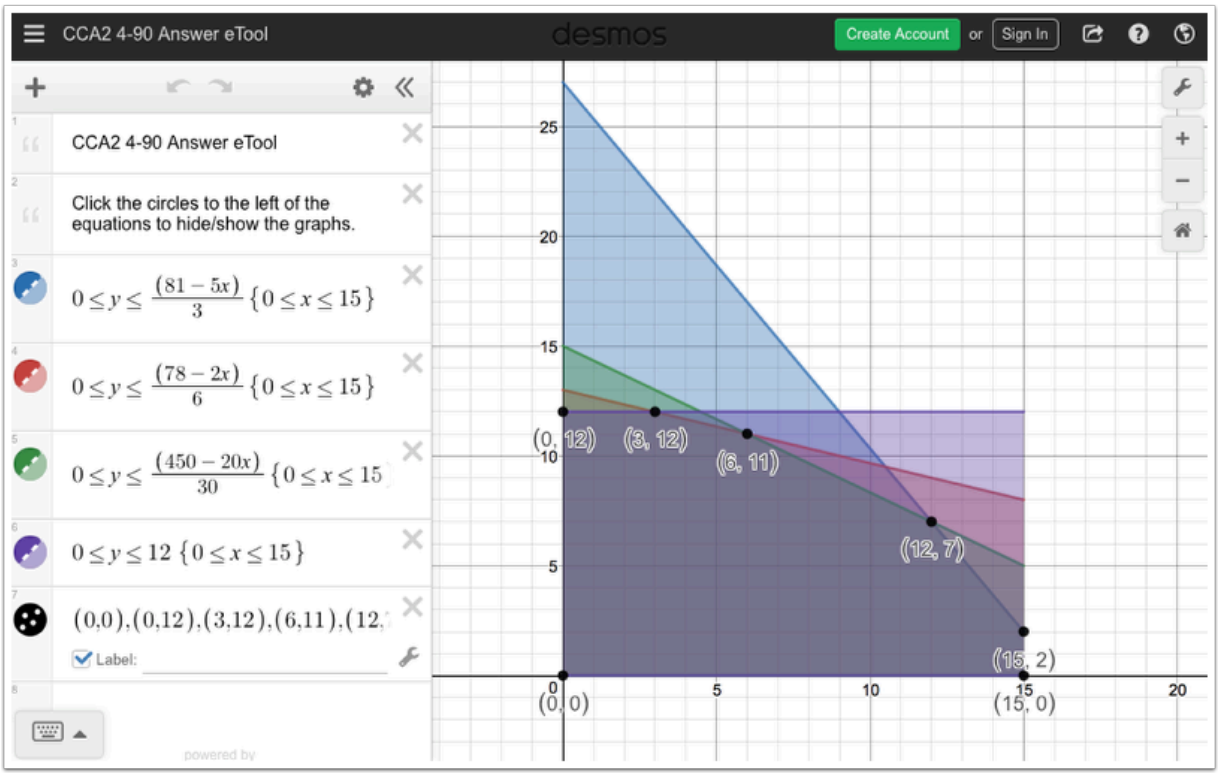

CCA2 4-79 & 4-81 Answer ...
desmos
Create Account
or
Sign In
between the number of cars (x), the number of trucks (y), and the number of gas tanks.
$0 < y \leq \{x > 0: 14-2x\}$
The equation below is the relationship between the number of cars (x), the number of trucks (y), and the number of seats.
$0 < y \leq \left\{x > 0: \frac{(15-x)}{3}\right\}$
Trucks
Cars
(0, 5)
(0, 4) (1, 4) (2, 4) (3, 4)
(0, 3) (1, 3) (2, 3) (3, 3) (4, 3)
(0, 2) (1, 2) (2, 2) (3, 2) (4, 2) (5, 2) (6, 2)
(0, 1) (1, 1) (2, 1) (3, 1) (4, 1) (5, 1) (6, 1)
(0, 0) (1, 0) (2, 0) (3, 0) (4, 0) (5, 0) (6, 0) (7, 0)

CCA2 4.2.3: 4-90 Answer eTool (Desmos)

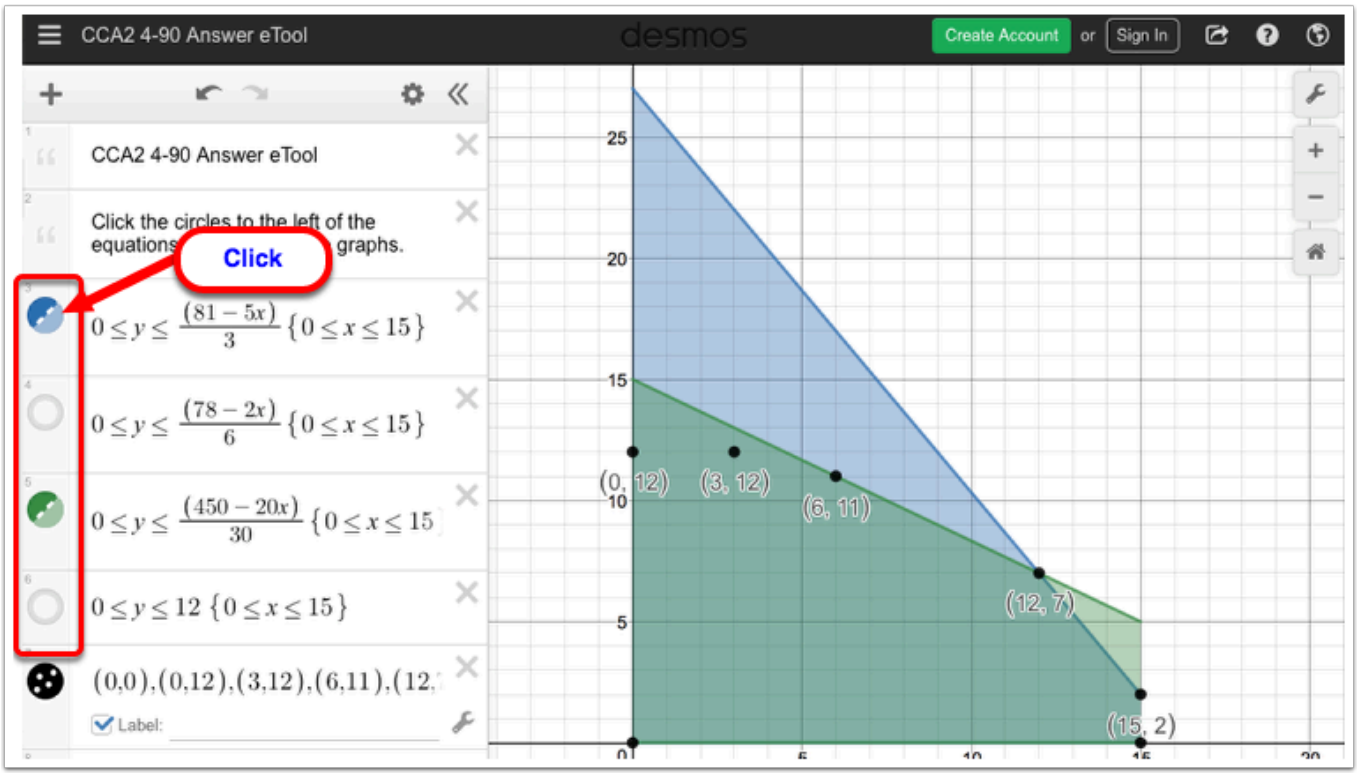
Click on the link below to access eTool.

4-90 Answer eTool (Desmos)

4-90 Answer Graphs:



Click the circles to the left of the equations to hide/show the graphs.



Chapter 5

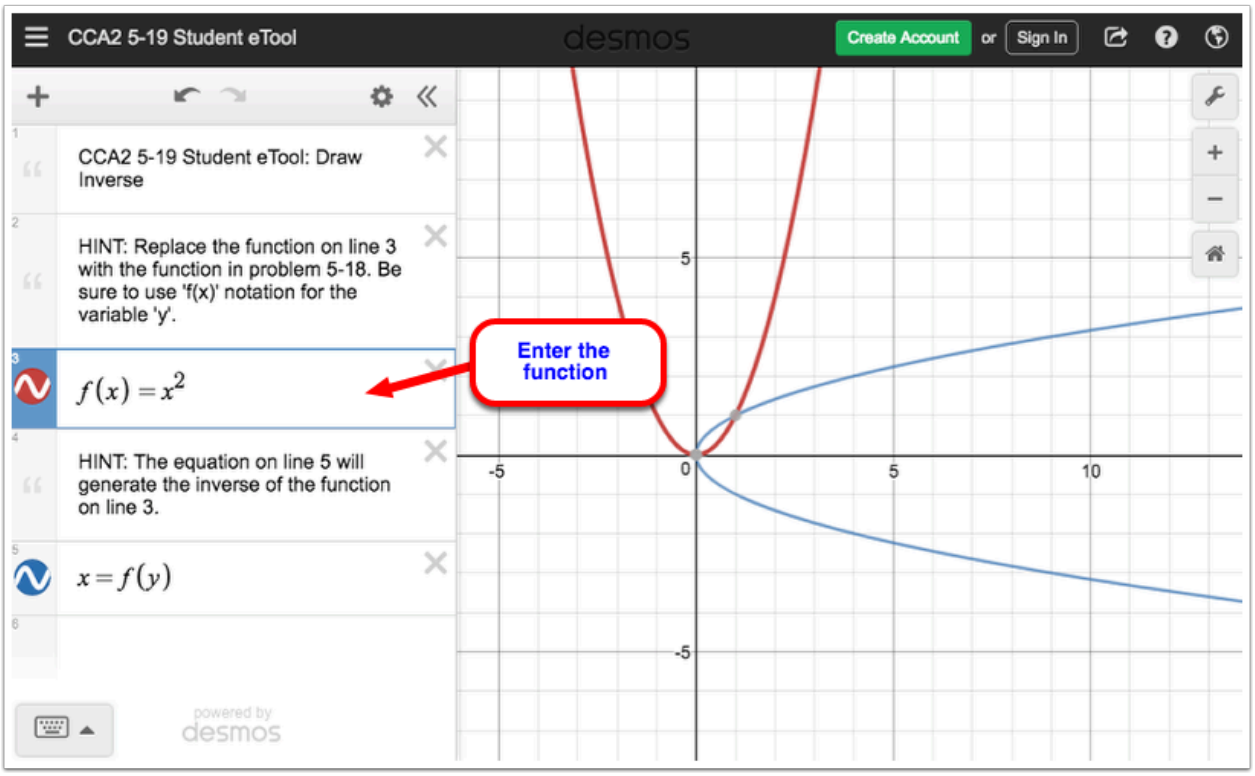
CCA2 5.1.2: 5-19 Student eTool (Desmos)

Click the link below to access eTool.

5-19 Student eTool (Desmos)

Draw Inverse

This eTool will help you to graph the inverse of a function. Check your inverse graph from problem 5-18 by following your teacher's instructions to use the inverse-drawing feature of your graphing calculator. Was the inverse graph that you drew correct?

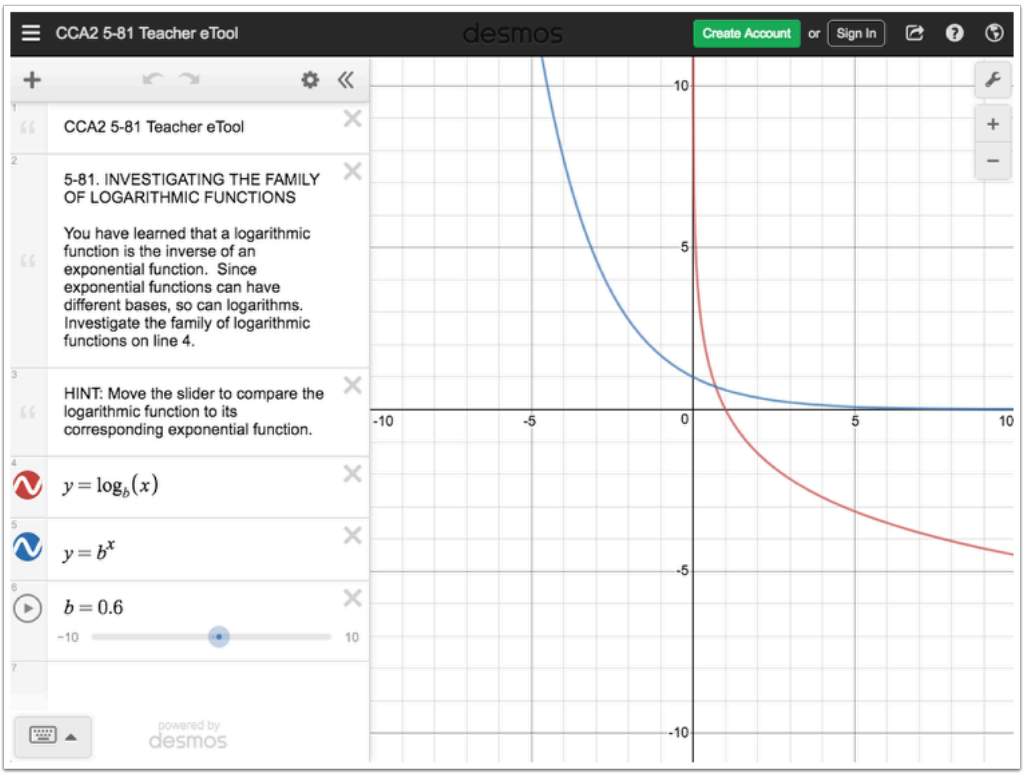


CCA2 5.2.3: 5-81 Teacher eTool (Desmos)

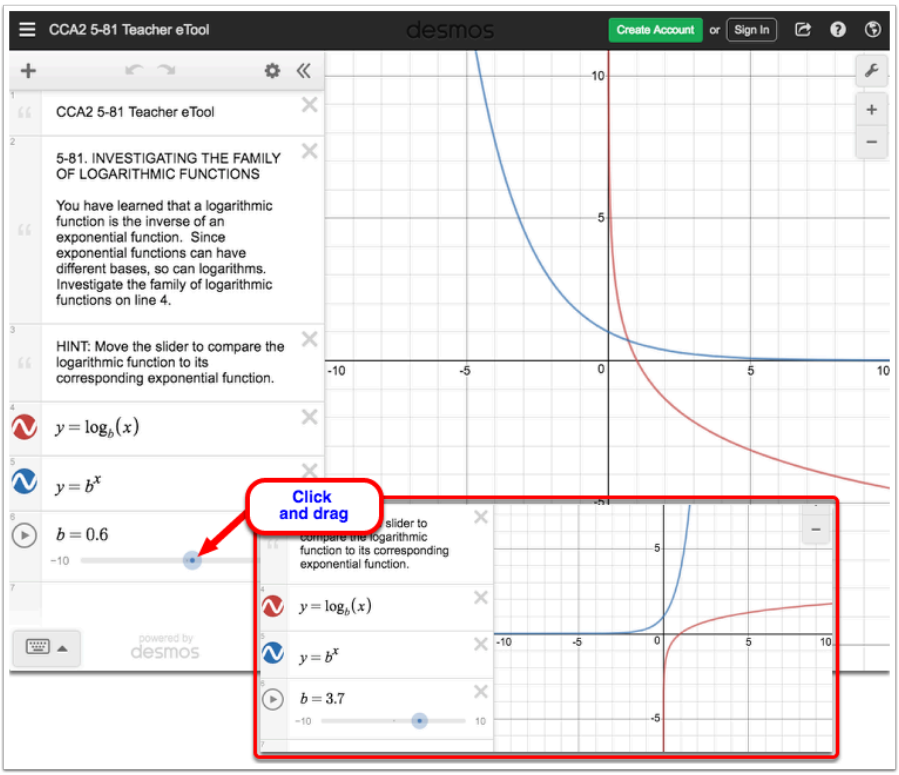
Click on the link below to access eTool.

5-81 Teacher eTool (Desmos)

Use this eTool to help students to visualize the graphs of f(x) = logb(x) as the value of b changes.



Click the BLUE point (slider) and drag horizontally to move.



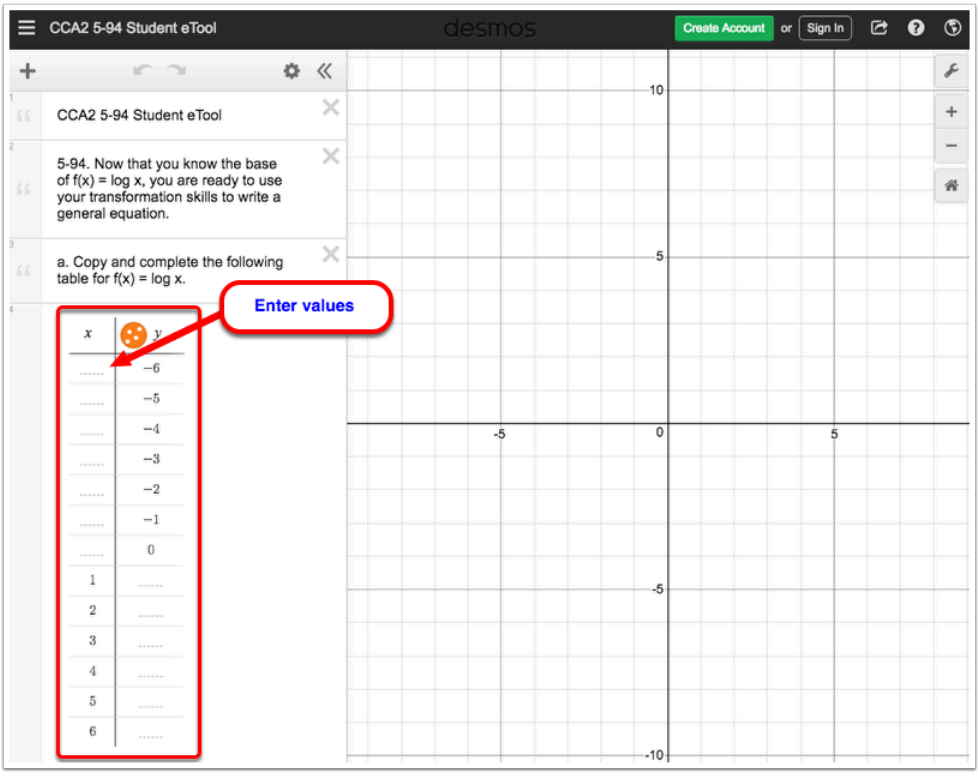
CCA2 5.2.4: 5-94 Student eTool (Desmos)

Click on the link below to access eTool.

5-94 Student eTool (Desmos)

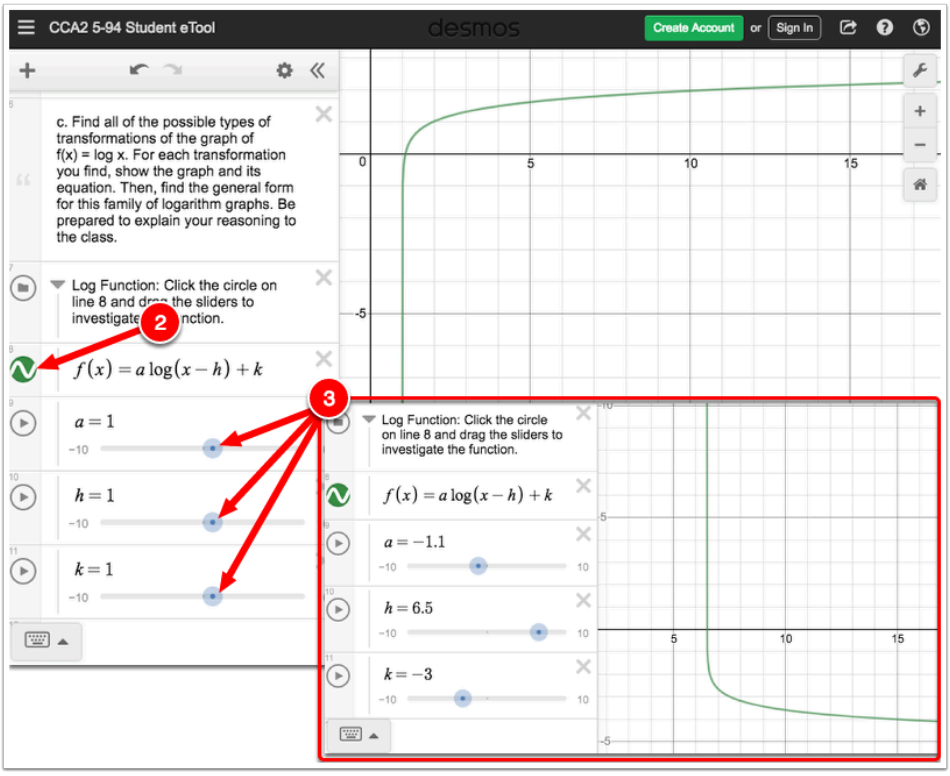
Use this eTool to learn more about the transformations of logarithmic functions.

1. Complete the table in line 4.



2. Click the circle on line 8 to explore the Log Function.

3. Click on the blue points (sliders) and drag horizontally to move.

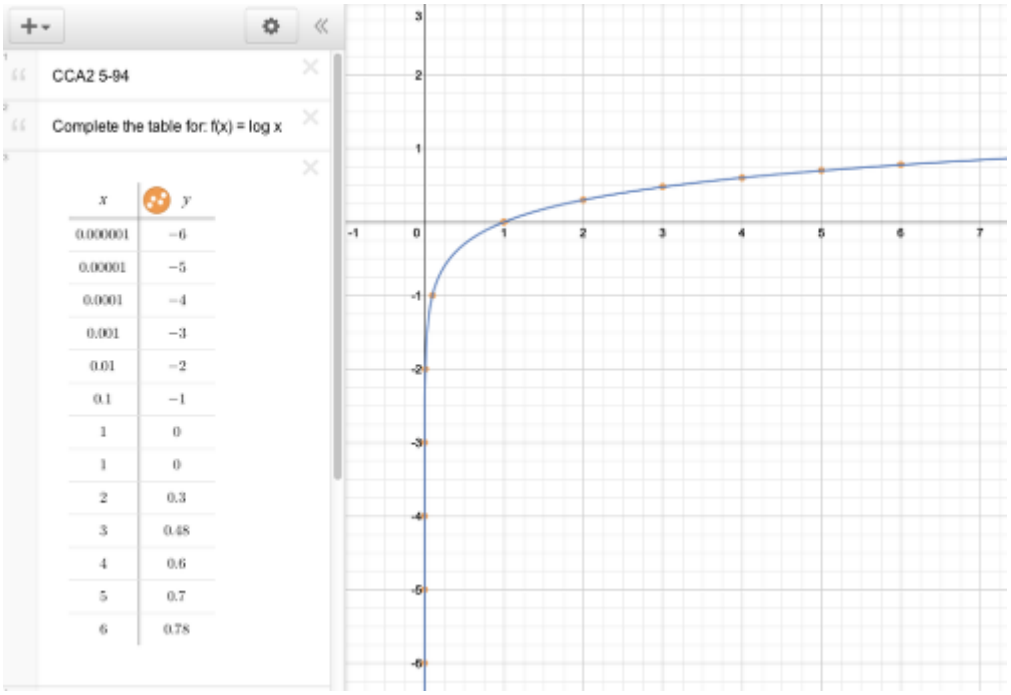


CCA2 5.2.4: 5-94 Answer eTool (Desmos)

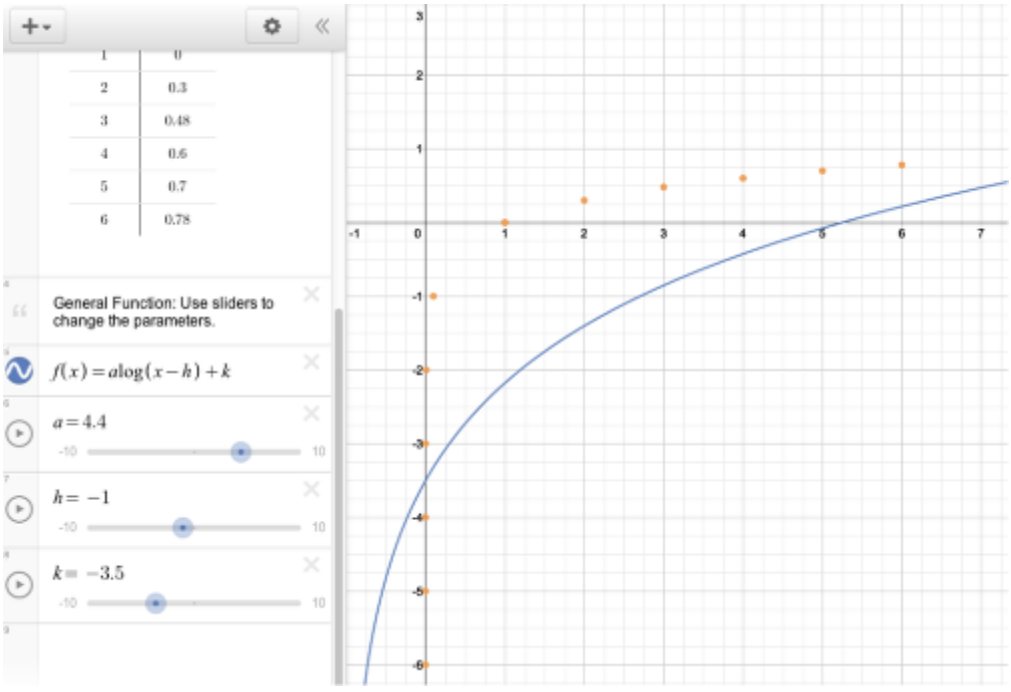
Click on the link below for the "5-94 Answer eTool (Desmos)."

5-94 Answer eTool (Desmos)

1. Table:



2. Explore with sliders:



Chapter 6

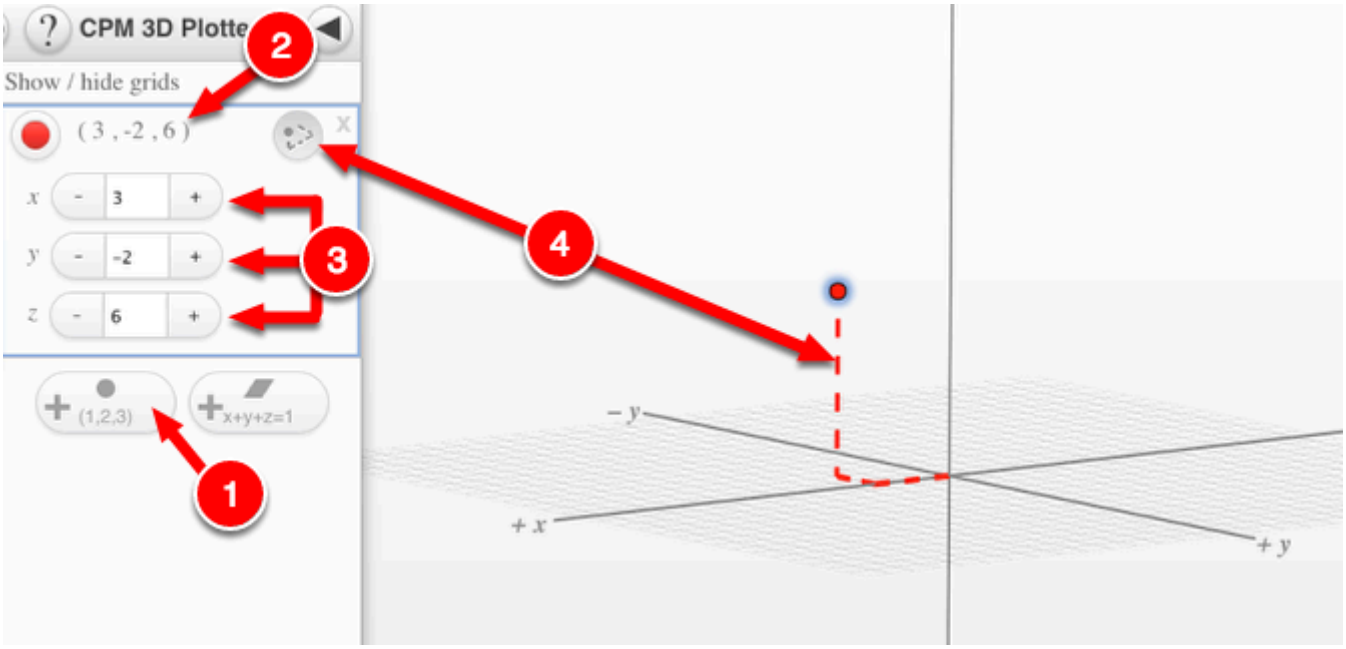
CCA2 6.1.2: 3D Point Plotter and Graphing Linear Equations in Three Variables (CPM)

Click on the link below to access eTool.

[3D Plotter (CPM)]

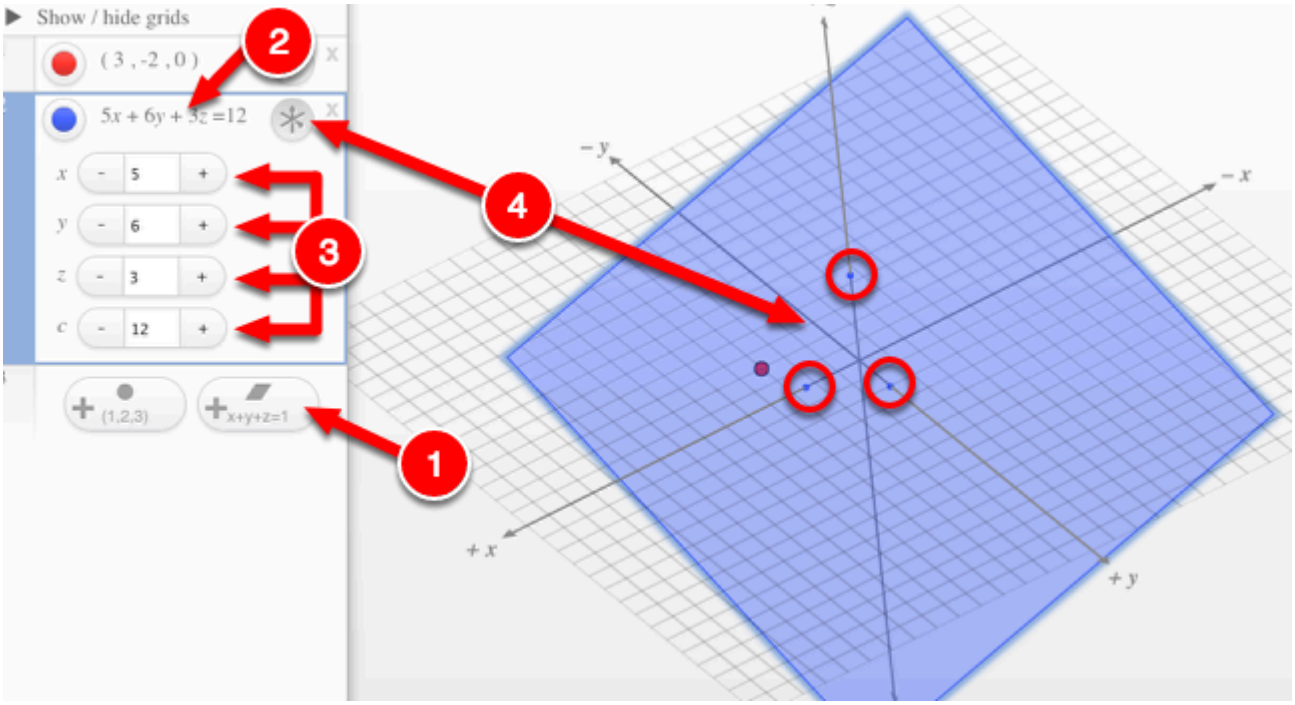
1. Enter the points (x, y, and z).

1. Click on the point plotter button to add a point.
2. Click on the (x, y, z) coordinates.
3. Type or click the '–' and '+' to modify the coordinates.
4. Click the trace button to view the path.



2. Enter the coefficients of an equations in the form: ax + by + cz = d.

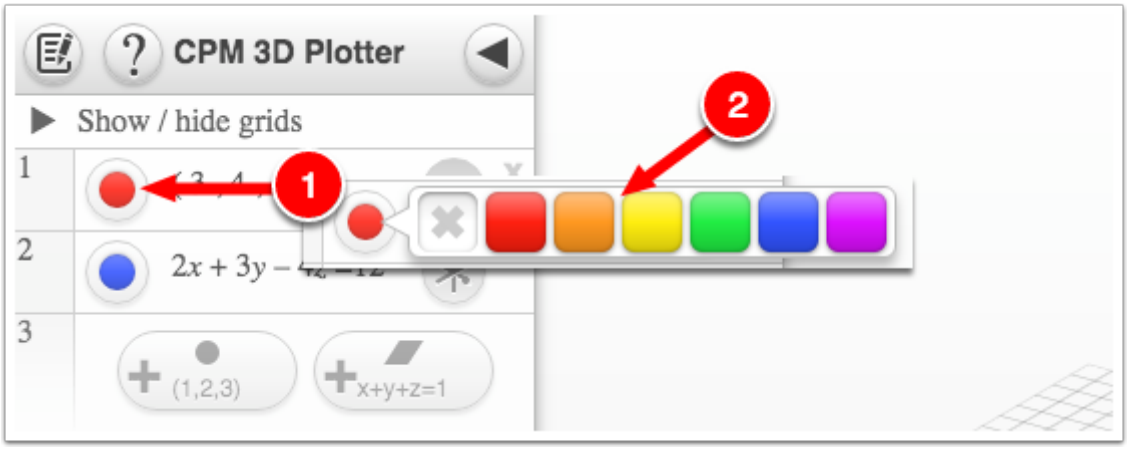
1. Click on the plane plotter button to add a plane.
2. Click on the equation to view the variables and constant.
3. Type or click the '–' and '+' to modify the coordinates for the variables and constant.
4. Click the intersect button to view the point the plane crosses the x, y, & z axes.



3. You can...

Change colors of the points and plane.

1. Click and hold on the colored buttons to view the settings.
2. Select the color you want to use.



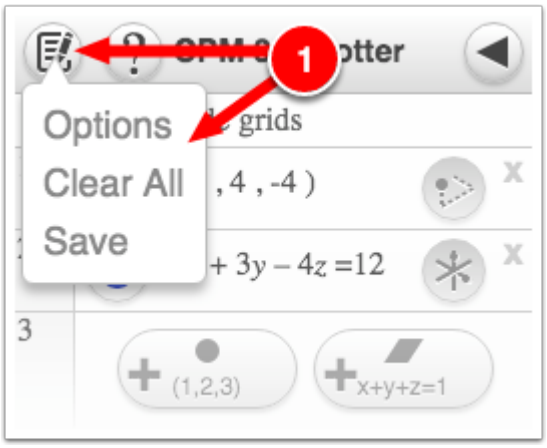
Add description, clear or save your work.

1. Click the Pen & Paper icon and select Options, Clear All or Save.

   Options - Add Title and Description of your work.

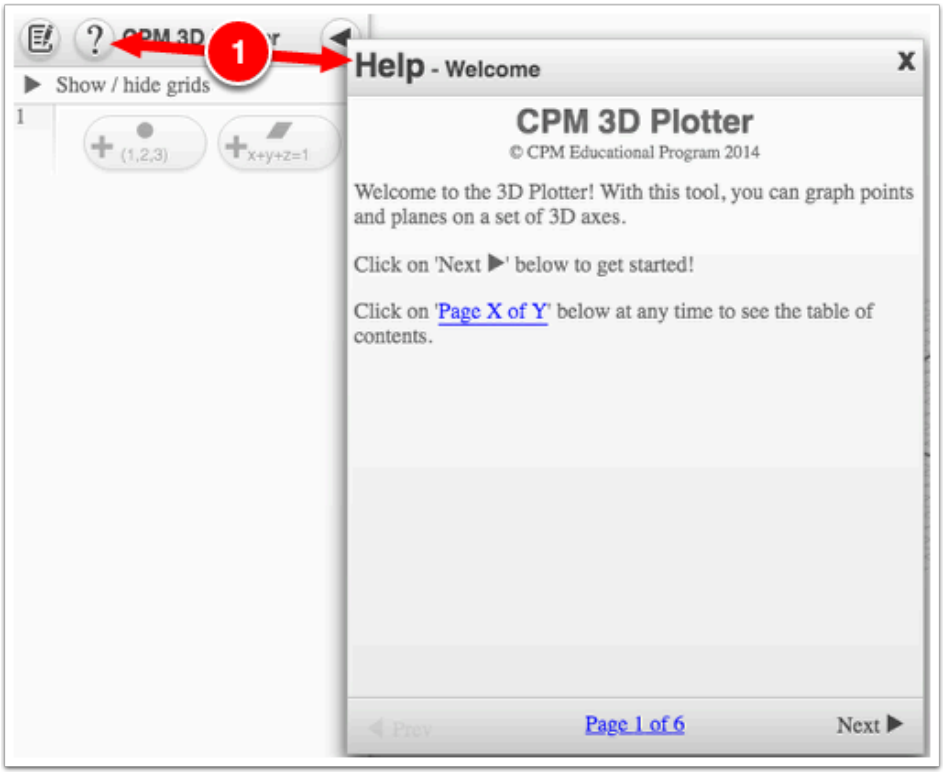
   Clear Tiles - This will remove all the points and plane.

   Save - This will save all the changes made.



Find more information in the the help (?) button.

1. Click '?' to view Help window.



CCA2 6.1.5: 6-61 Student eTool (Desmos)

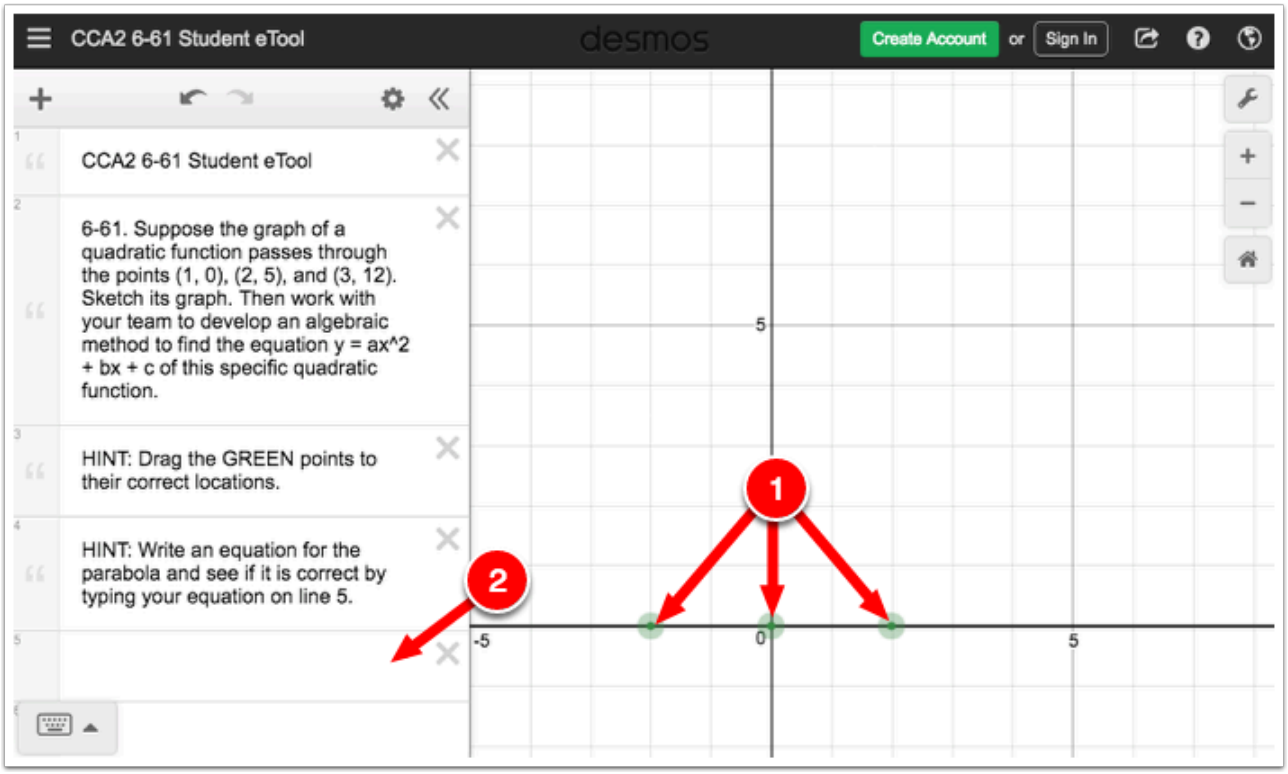
Click on the link below to access eTool.

6-61 Student eTool (Desmos)

Use this eTool to complete problem 6-61.

1. Click and drag the GREEN points to their correct locations.

2. Type the equation for the parabola on line 5.



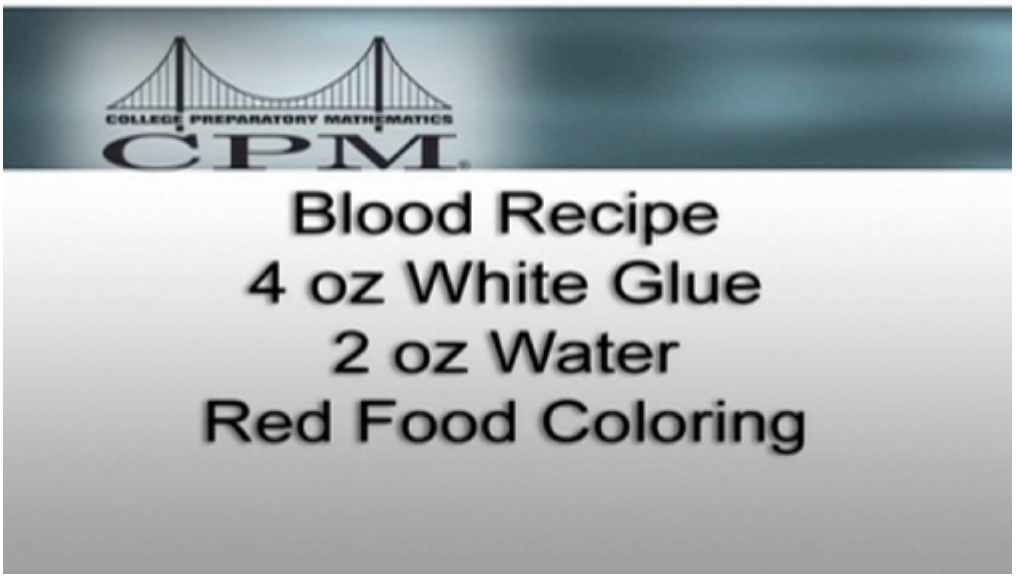
Chapter 7

CCA2 7.1.1: Blood Drip Lab Preparation Video

Click on the link below for the "Blood Drip Lab Preparation Video"

Blood Drip Lab Preparation

1. Recipe:



2. Set up:

3. Demonstration:

CCA2 7.1.2: 7-12 Student eTools (Desmos)

Click on the links below to access eTools.

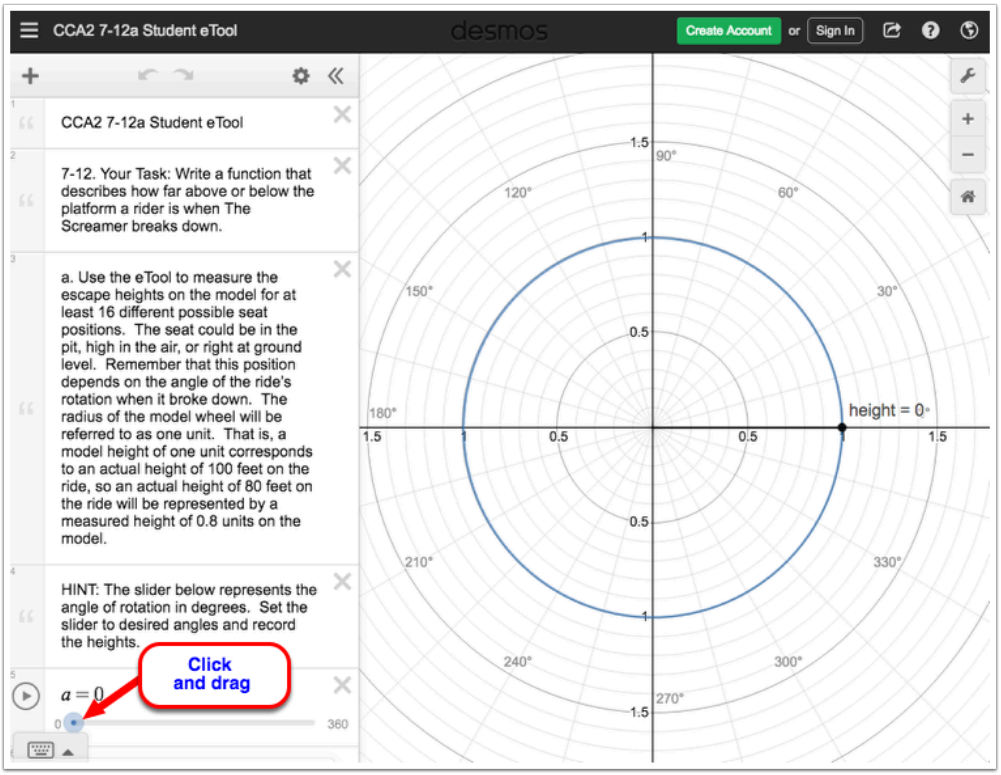
7-12a Student eTool (Desmos)
7-12b Student eTool (Desmos)

Use these eTools to complete the task in problem 7-12.

7-12a: Use the eTool to measure the escape heights on the model for at least 16 different possible seat positions.

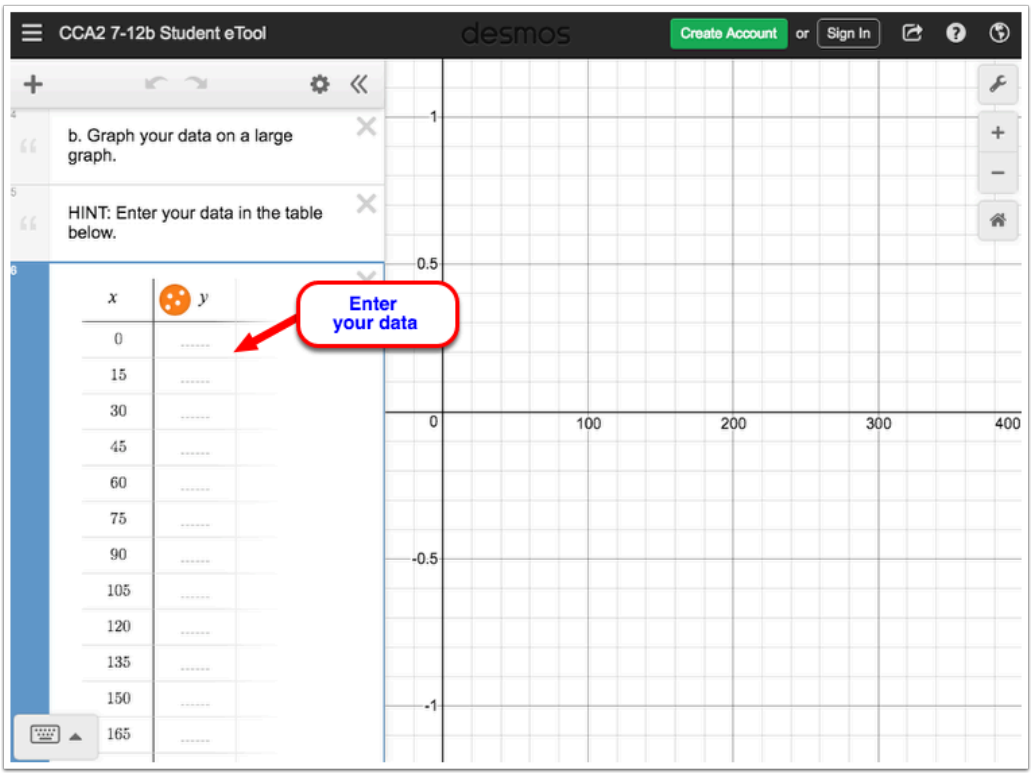
The slider represents the angle of rotation in degrees. Set the slider to desired angles and record the heights.

- Click the BLUE point (slider) and drag horizontally to move.



7-12b: Graph your data.

- Enter your data in the table.


CCA2 7-12b Student eTool
desmos
Create Account
or
Sign In
b. Graph your data on a large graph.
HINT: Enter your data in the table below.
x
y
0
15
30
45
60
75
90
105
120
135
150
165
Enter your data
1
0.5
0
100
200
300
400
-0.5
-1

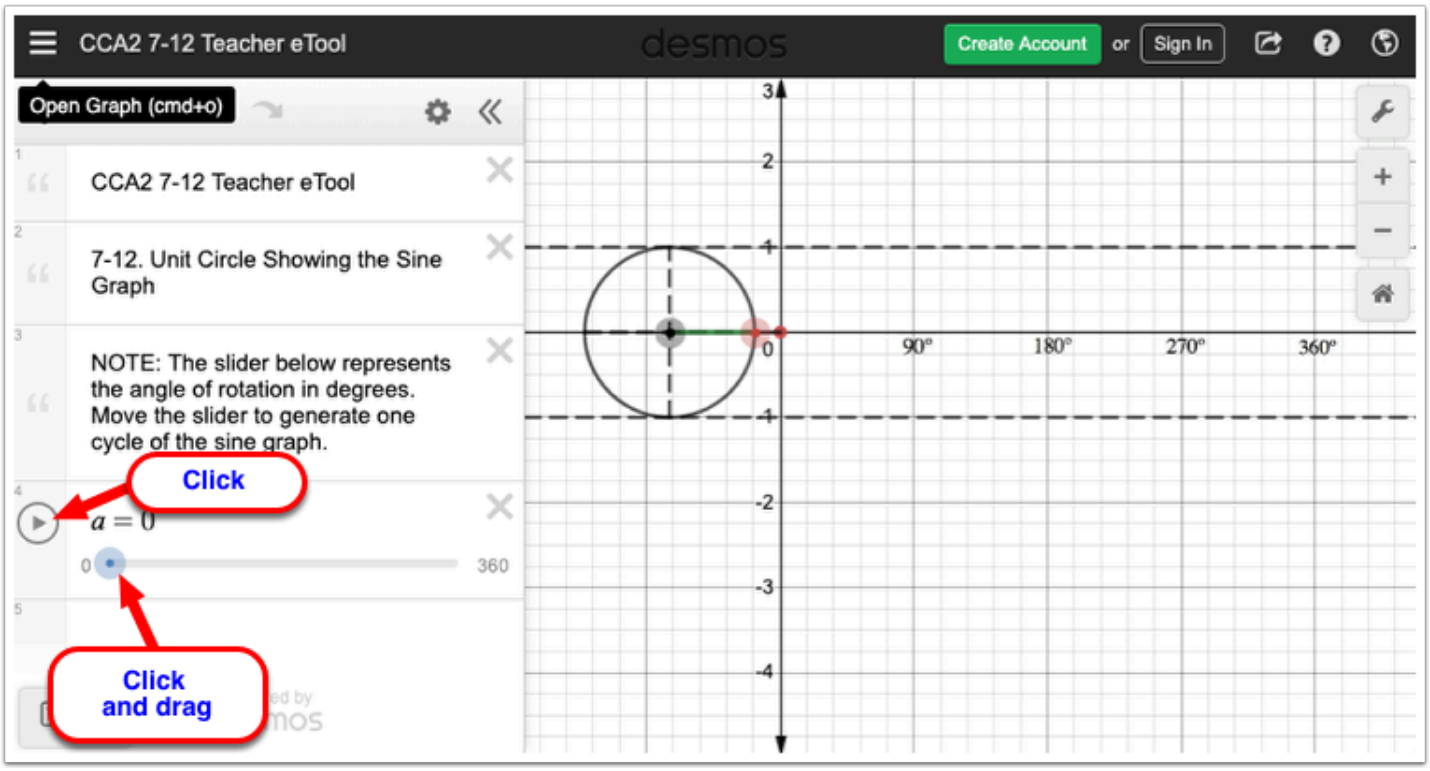
CCA2 7.1.2: 7-12 Teacher eTool (Desmos)

Click on the links below to access eTool.

7-12 Teacher eTool(Desmos)

This eTool demonstrates a unit circle showing sine curve.

To move the slider, you can either click the play button to the left of the slider (line 3) or click the BLUE point and drag horizontally.



CCA2 7.1.3: 7-33 & 7-34 Student eTools (Desmos)

Click on the links below to access eTools.

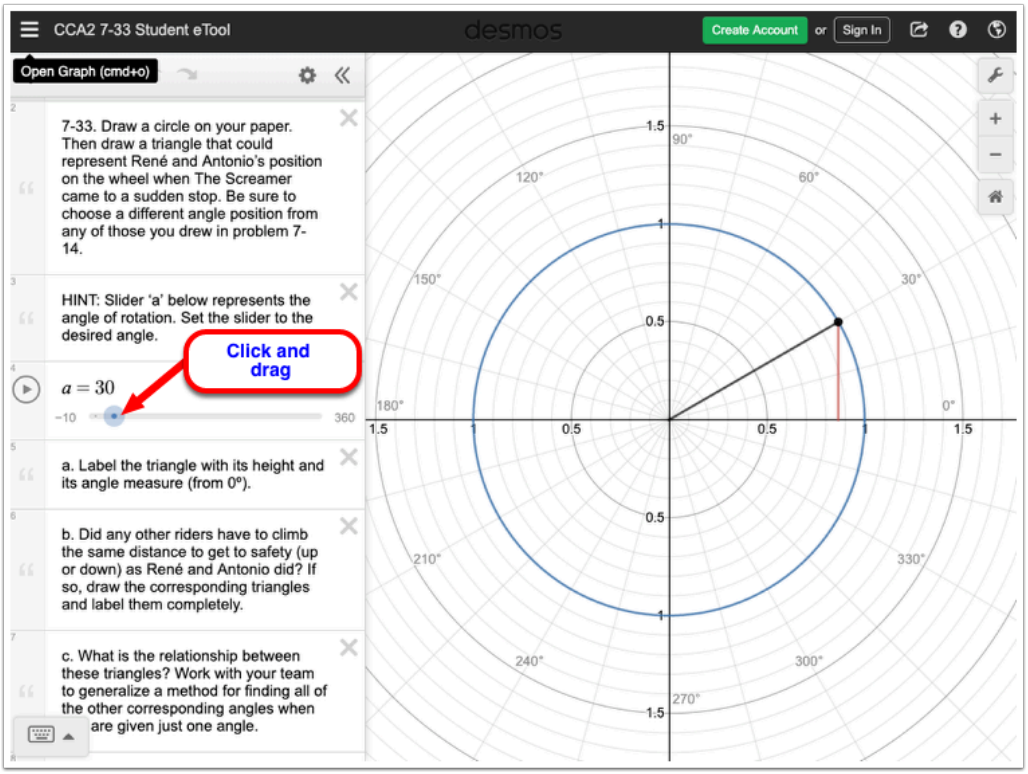
7-33 Student eTool(Desmos)
7-34 Student eTool(Desmos)

Investigate how are circles and sine graphs connected.

Explore these eTools to find the height of a seat on The Screamer in two different ways: unit circle and sine graph.

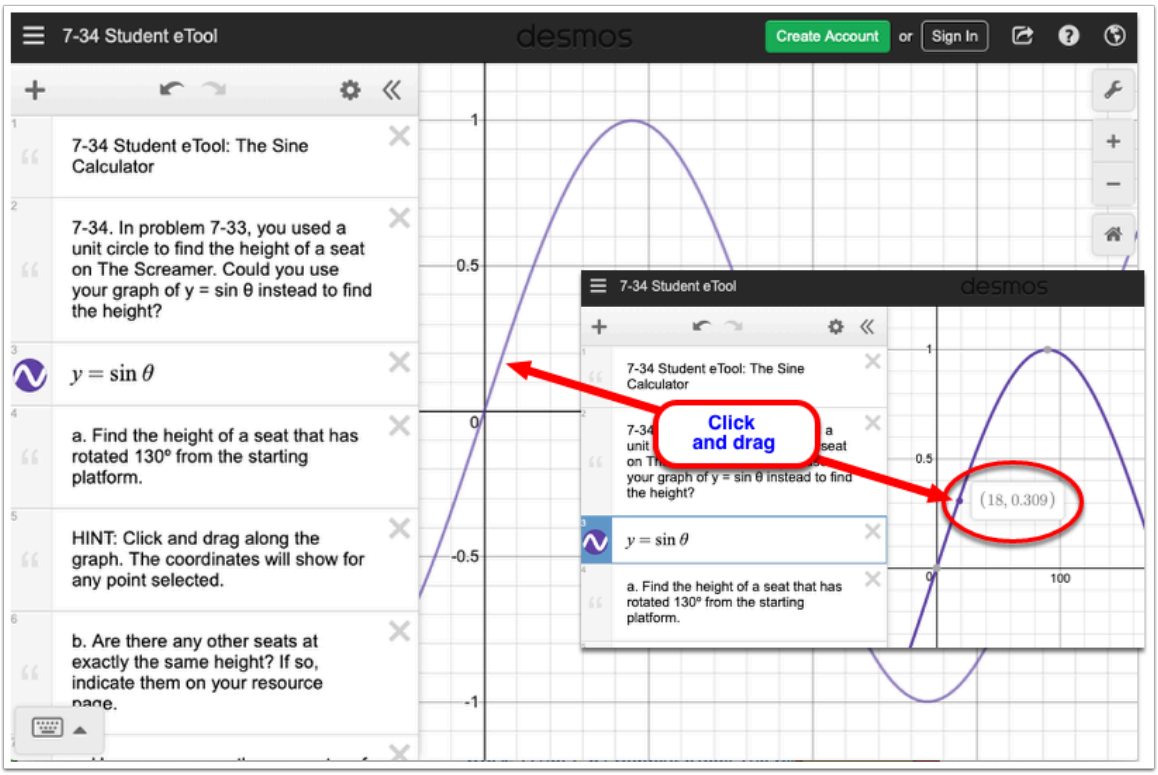
Unit Circle

1. Click on the BLUE point (slider 'a') on line 4 and drag horizontally to the desired angle.



Sine Graph

1. Click on the graph and drag along the curve to view a point and its coordinate.

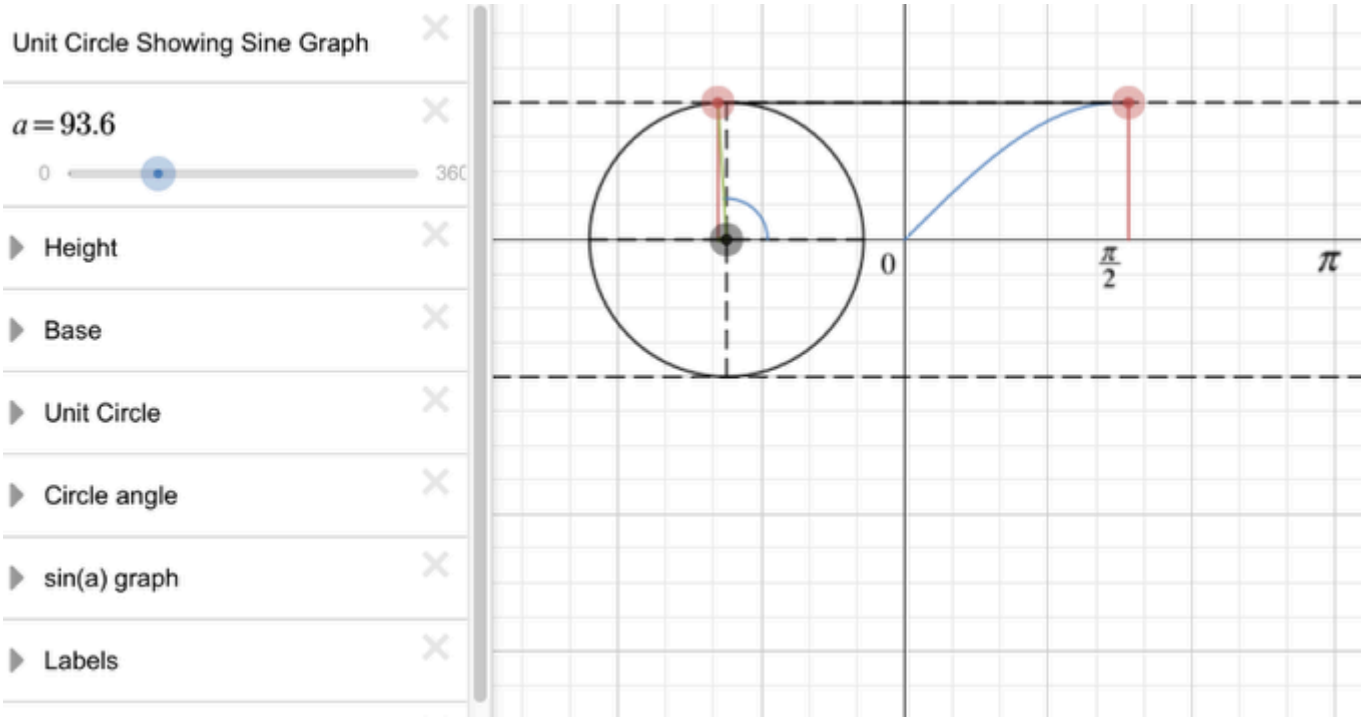


CCA2 7.1.3: 7-34 Unit Circle Showing Sine Curve (Desmos)

Click on the link below for the “7-34 Unit Circle Showing Sine Curve (Desmos)."

Unit Circle Showing Sine Curve (Desmos)

1. The Unit Circle and the Sine Curve

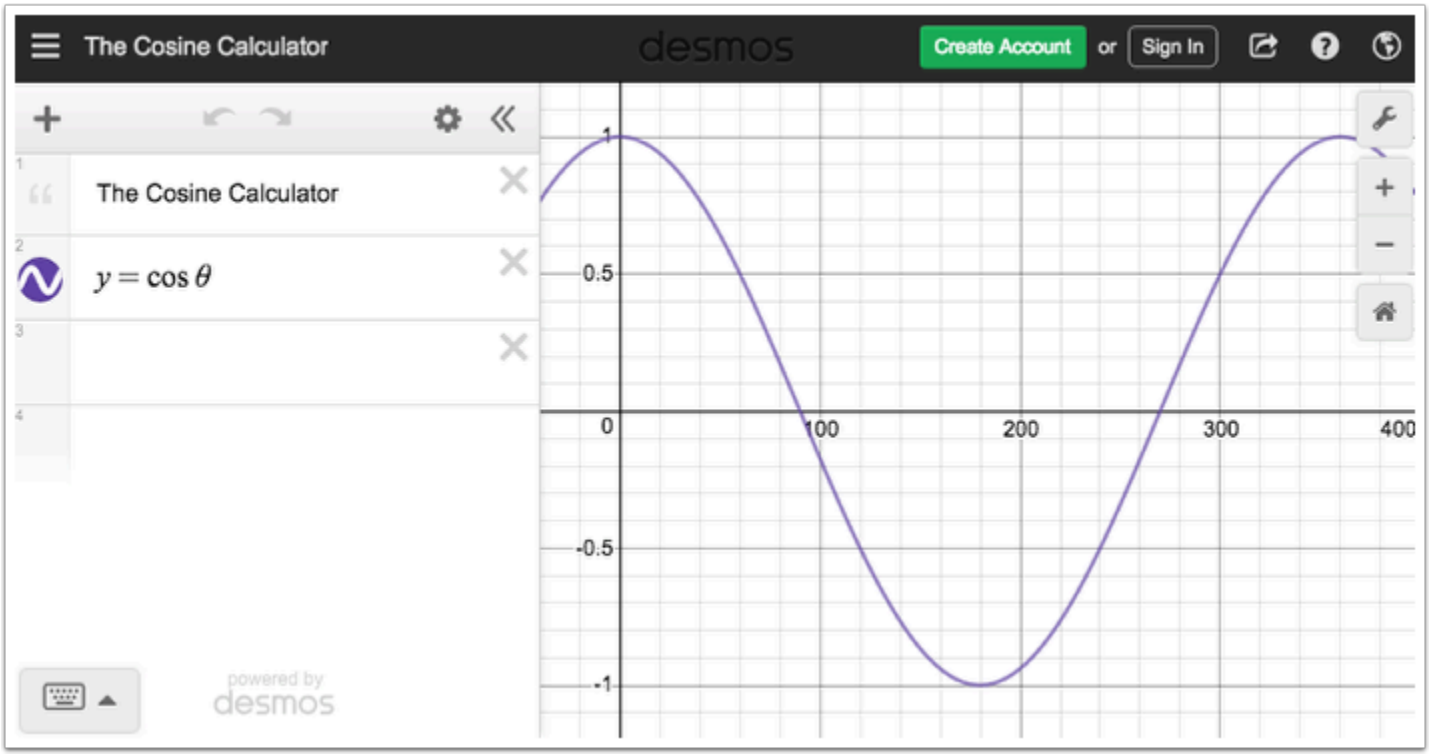


CCA2 7.1.4: 7-52 Student eTool: The Cosine Calculator eTool (Desmos)

Click on the link below to access eTool.

The Cosine Calculator eTool (Desmos)

Explore the Cosine function with this eTool.



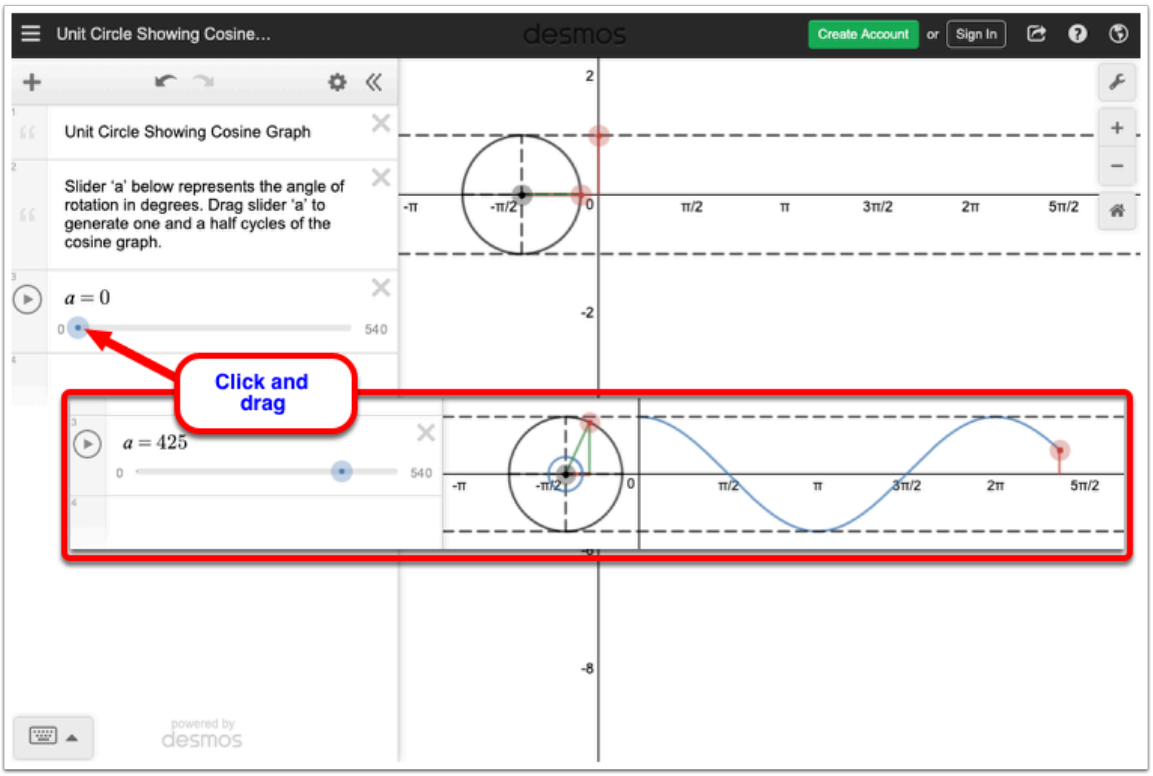
CCA2: 7.1.4: Unit Circle Showing Cosine Graph Teacher eTool (Desmos)

Click on the link below to access eTool.

Unit Circle Showing Cosine Graph (Desmos)

This eTool can be used as a closure activity demonstration for the lesson.

1. Click on the BLUE point (slider 'a') and drag horizontally to view angle of rotation.



CCA2 7.1.5: 7-73 Teacher eTool (Desmos)

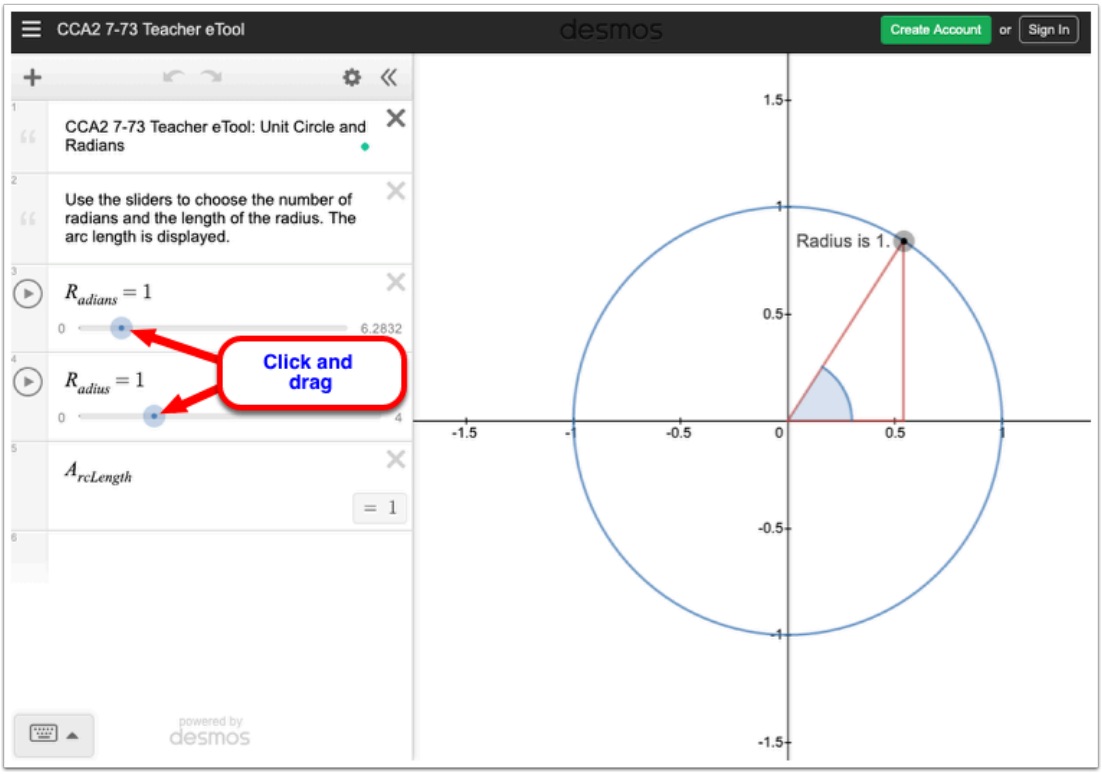
Click on the link below to access eTool.

7-73 Teacher eTool (Desmos)

Unit Circle and Radians

Use this eTool to demonstrate/summarize students findings concerning the relationship between the radius of a circle and radian measurement.

1. Click on the BLUE points (Radians and Radius sliders) and drag horizontally to find the arc length for a particular radius and radian measure.

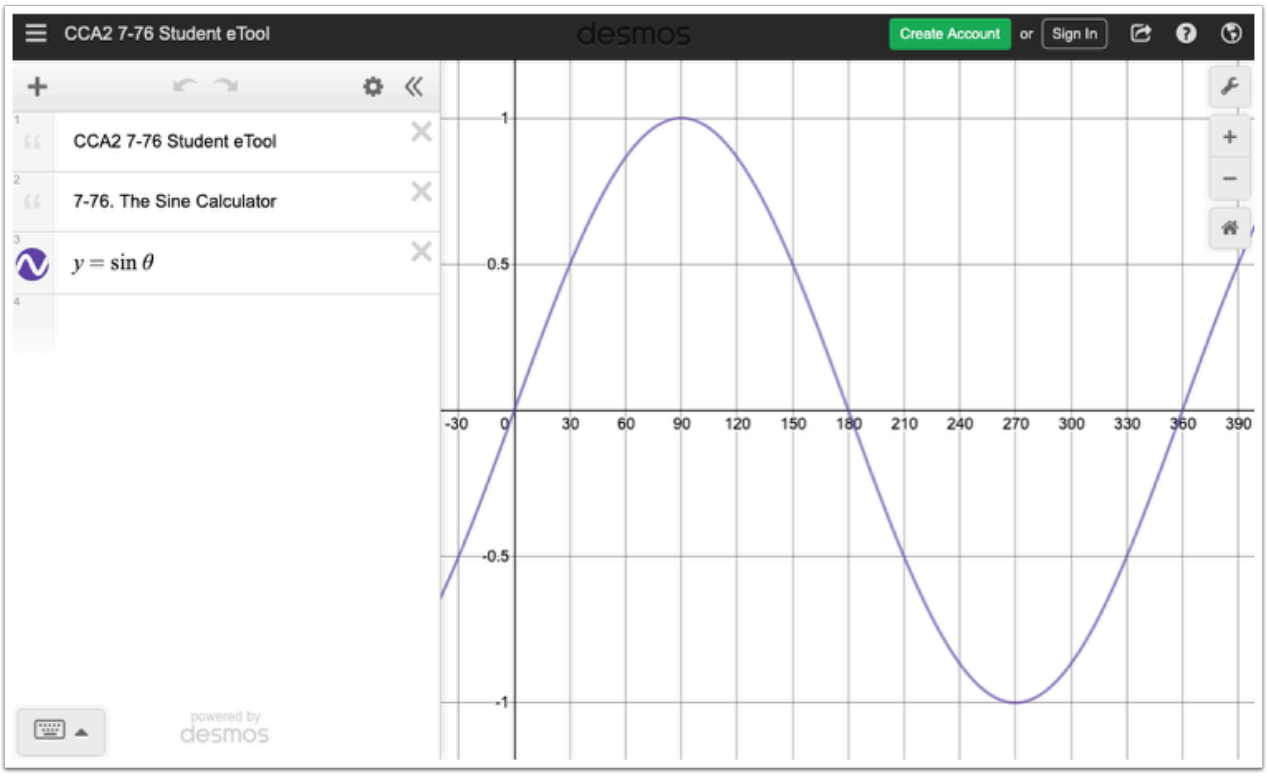


CCA2 7.1.5: 7-76 Student eTool (Desmos)

Click on the link below to access eTool.

7-76 Student eTool (Desmos)

Use this Sine Calculator eTool to complete problem 7-76.

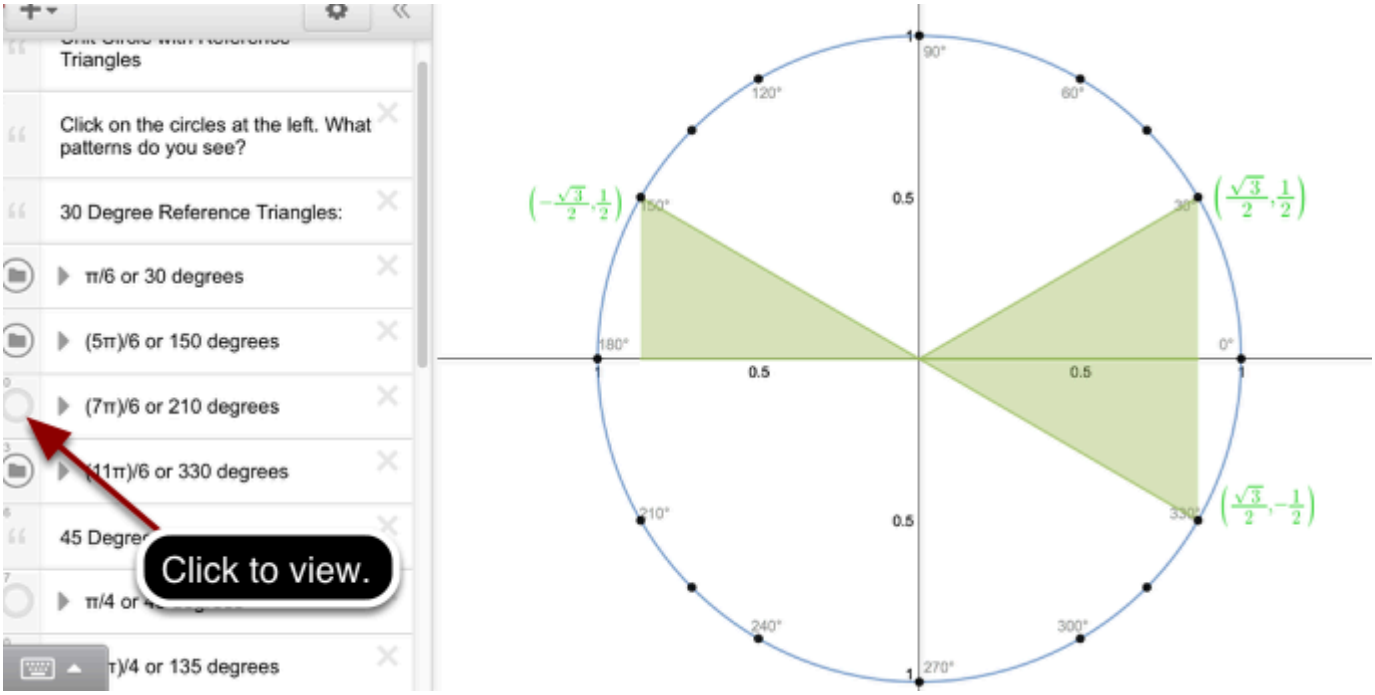


CCA2 7.1.6: Unit Circle with Reference Triangles (Desmos)

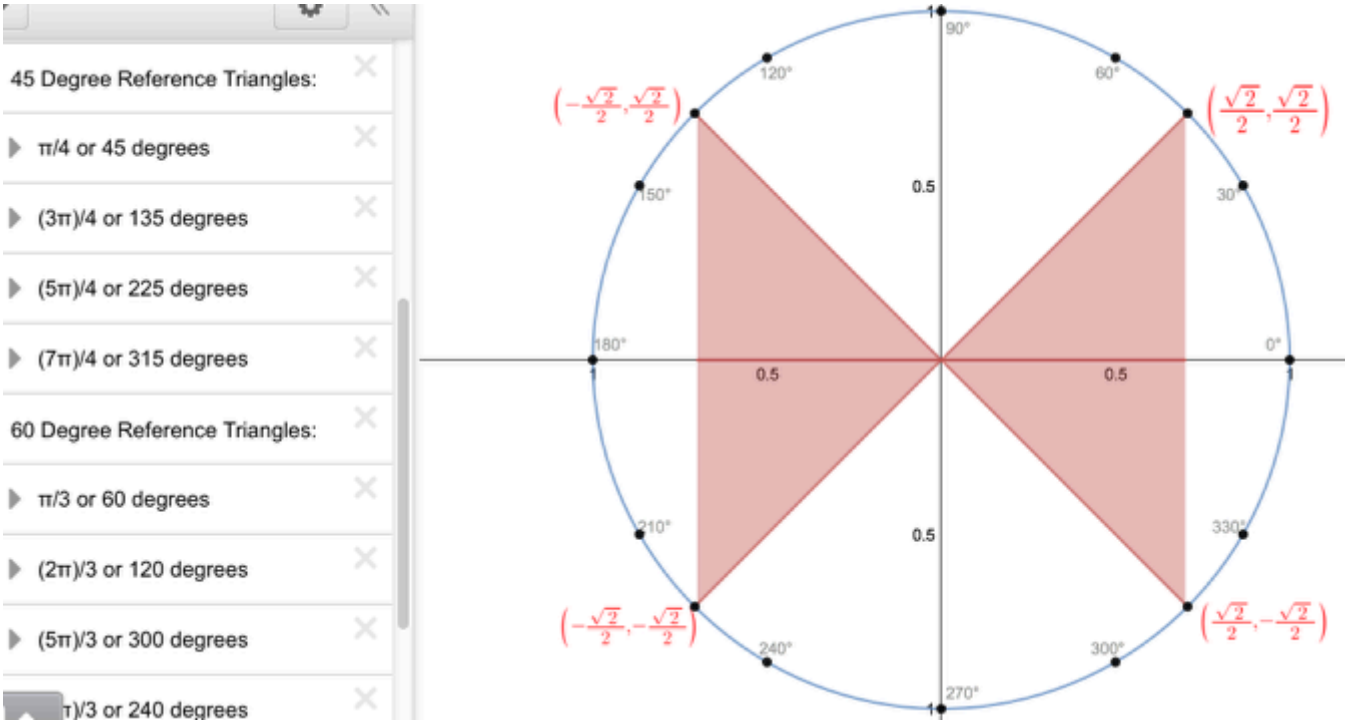
Click on the link below for the "Unit Circle (Desmos)."

Unit Circle with Reference Triangles (Desmos)

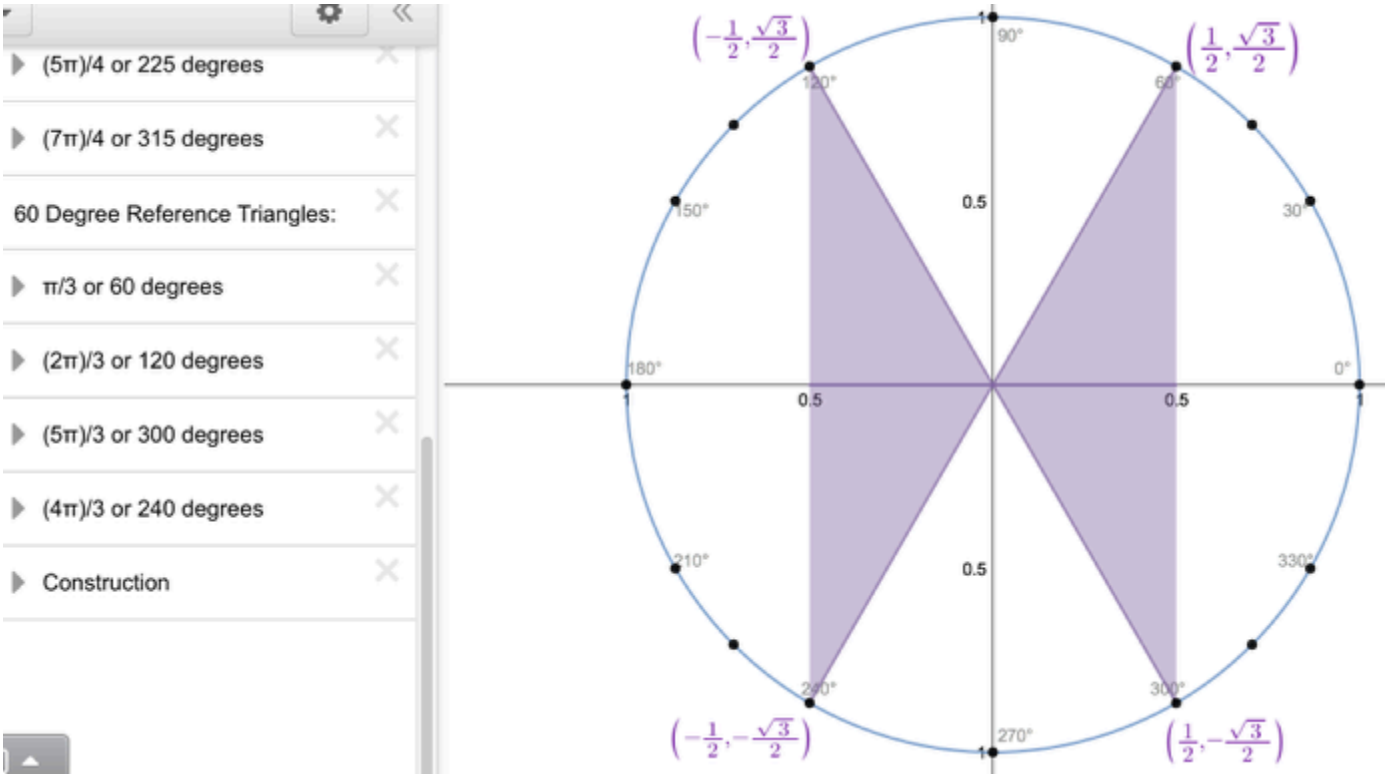
1. Unit Circle with Reference Triangles: Explore 30 Degree Reference triangles.



2. Unit Circle with Reference Triangles: Explore 45 Degree Reference triangles.



3. Unit Circle with Reference Triangles: Explore 60 Degree Reference triangles.



CCA2 7.1.7: 7-100 Student eTools (Desmos)

Click on the links below to access eTools.

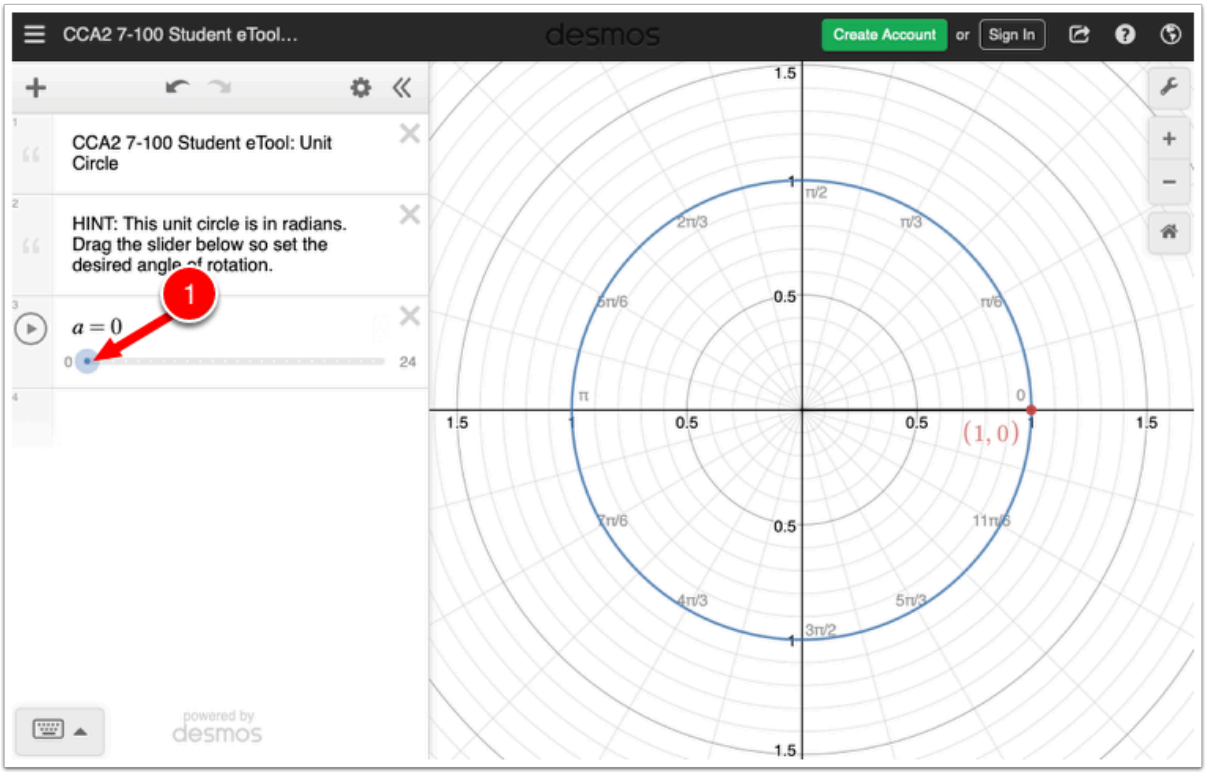
7-100 Student eTool: Unit Circle(Desmos)
7-100 Student eTool: Tangent Table(Desmos)

The Tangent Function

Explore these eTools to complete problem 7-100:

Unit Circle

1. Click on the BLUE point (slider 'a') on line 3 and drag horizontally to the desired angle.

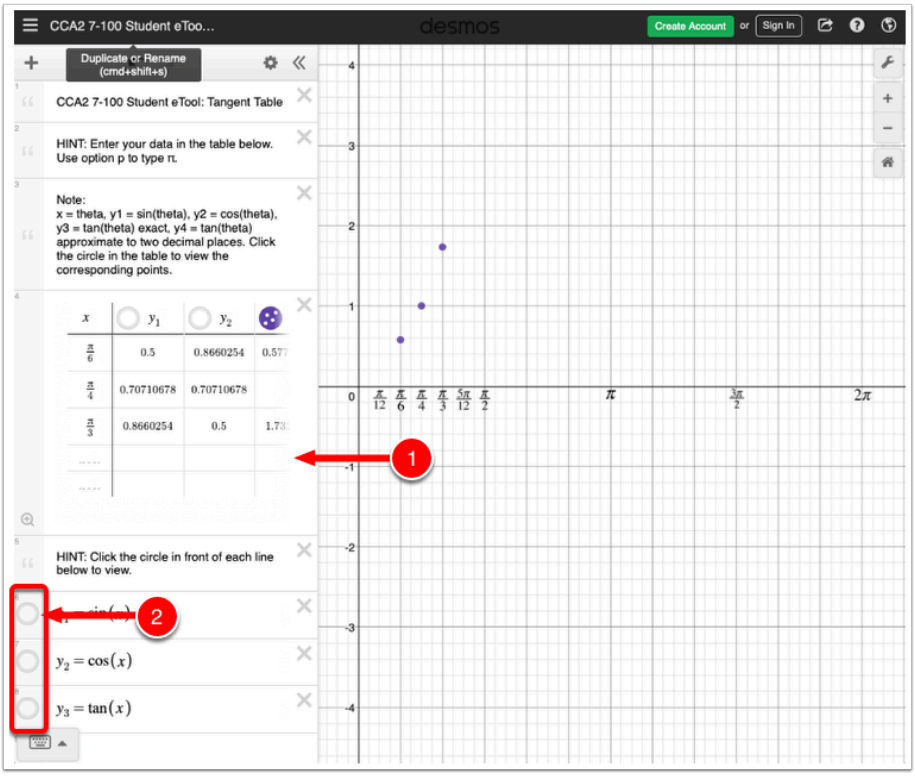


Tangent Table

1. Enter your data in the table on line 4.

NOTE: Use 'option + p' to type π.

2. Click the circles to left of lines 6, 7, and 8 to view each graph.

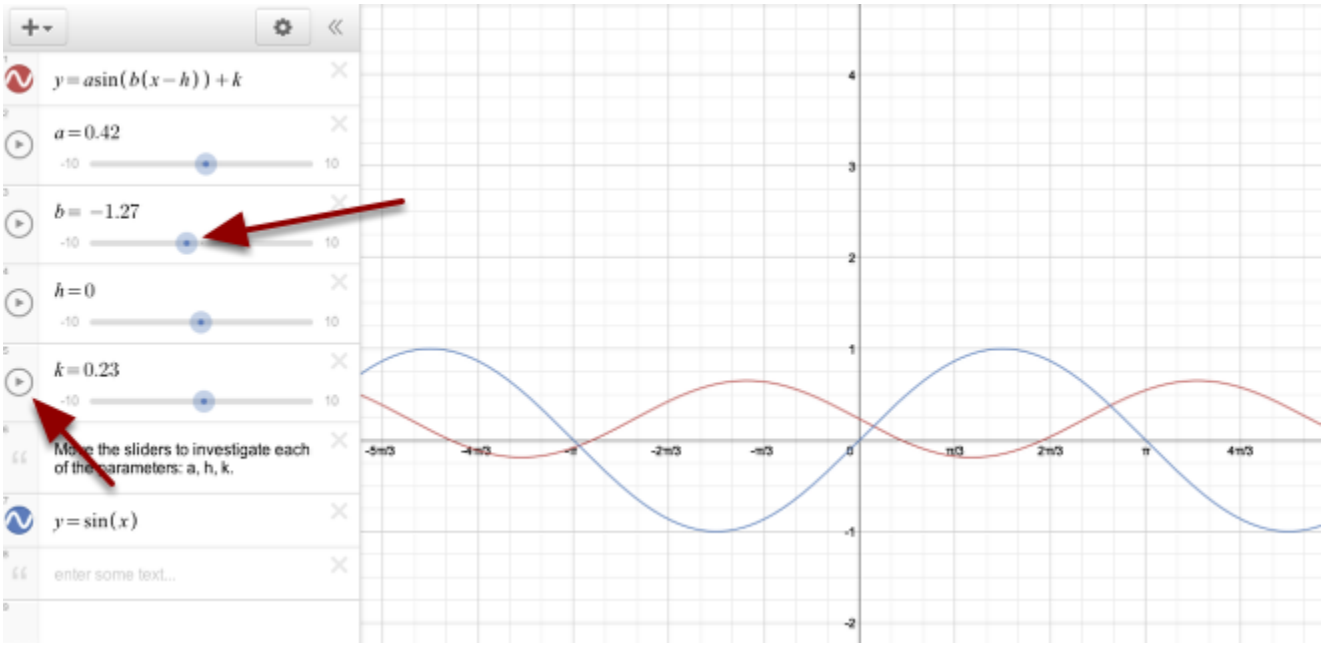


CCA2 7.2.1: Transforming Sine and Cosine Functions (Desmos)

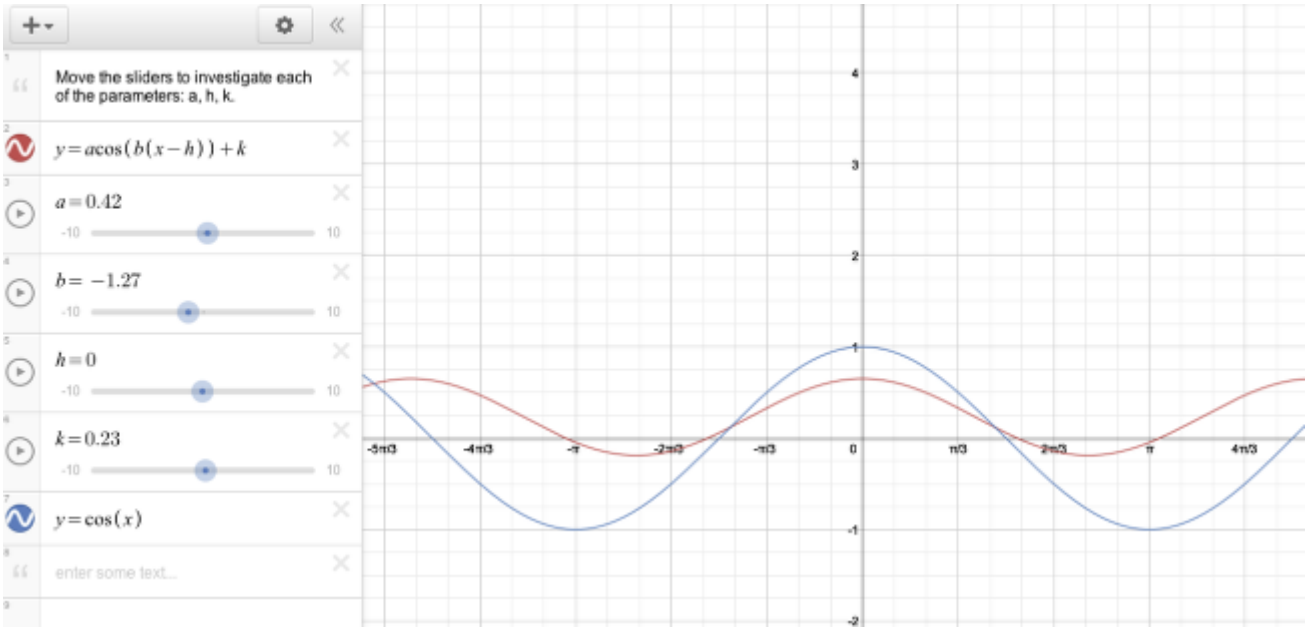
Click on the links below.

Transforming Sine Functions (Desmos)
Transforming Cosine Functions (Desmos)

1. Move sliders or the play button in front of the sliders to investigate the sine curve.



2. Move sliders or the play button in front of the sliders to investigate the cosine curve.

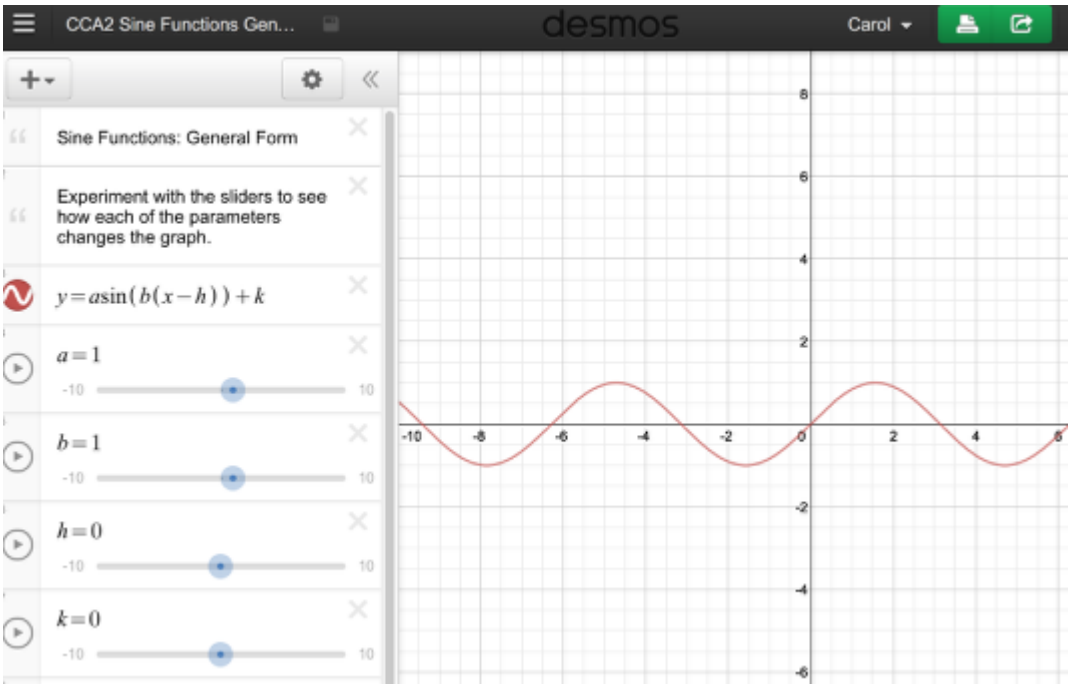


CCA2 7.2.4: General Form of the Sine Function with Sliders (Desmos)

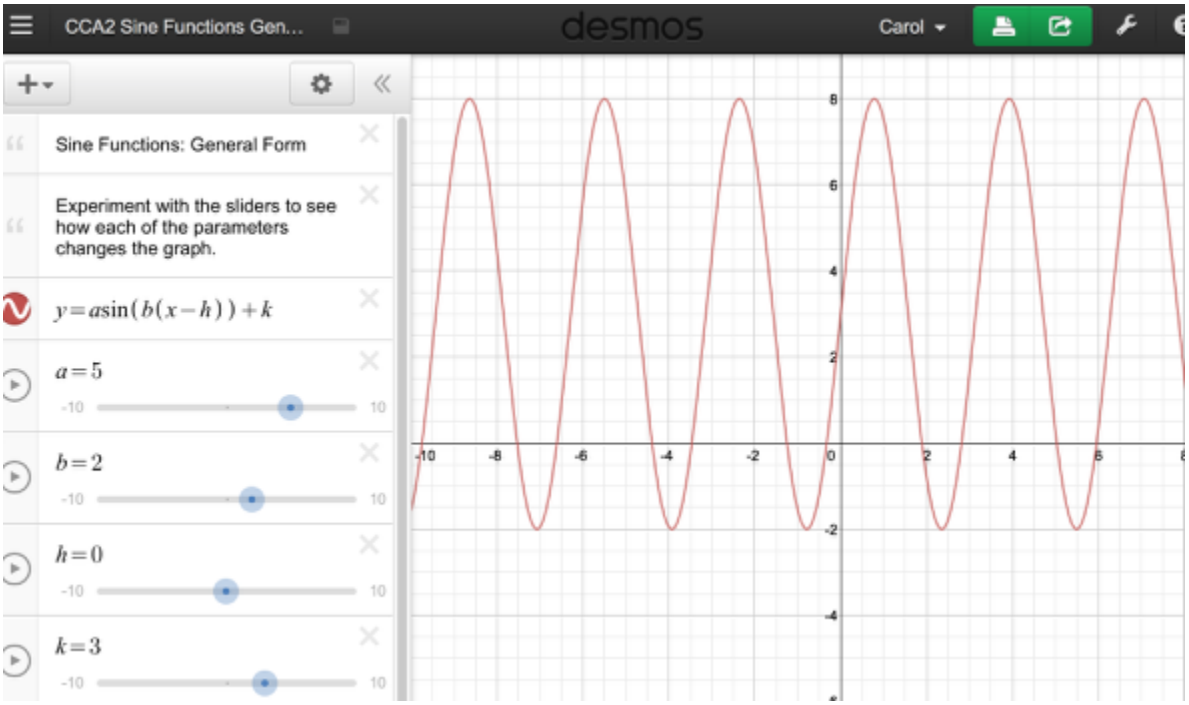
Click on the link below.

General Form of the Sine Function with Sliders (Desmos)

1. Move sliders to translate.



2. Translated function.



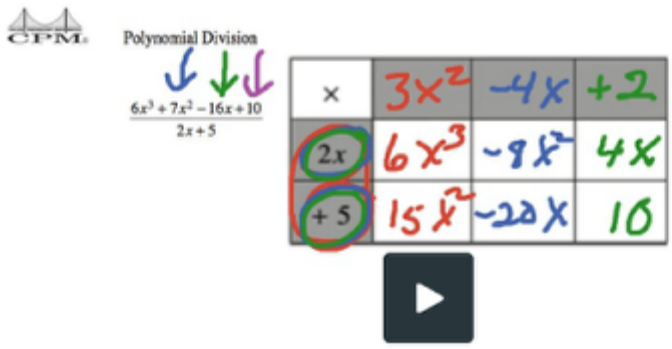
Chapter 8

CCA2 8.3.1: Polynomial Division with and without a remainder Videos

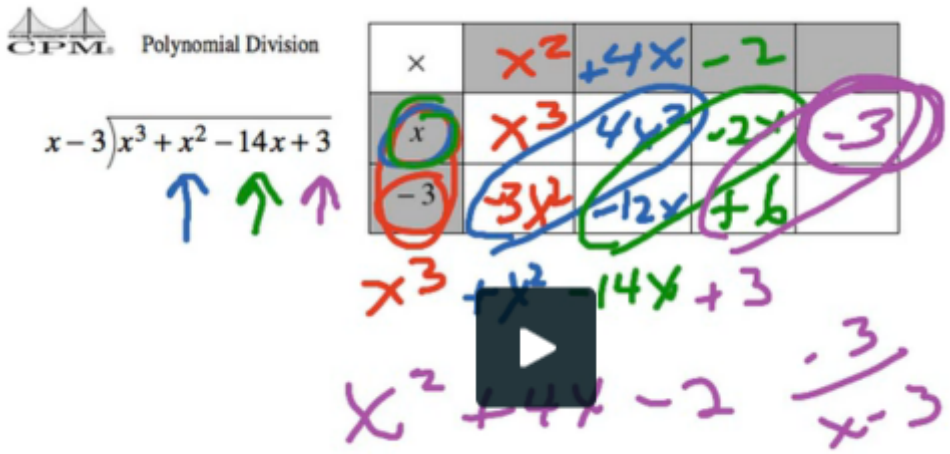
Click on the link below for the “Polynomial Division with and without a remainder Videos"

Polynomial Division without a remainder
Polynomial Division with a remainder

1. This video show how to use a generic rectangle for Polynomial Division without a remainder.



2. This video show how to use a generic rectangle for Polynomial Division with a remainder.



Chapter 9

CCA2 9.3.1: 9-71 Student eTool (Desmos)

Click on the link below to access eTool.

9-71 Student eTool (Desmos)

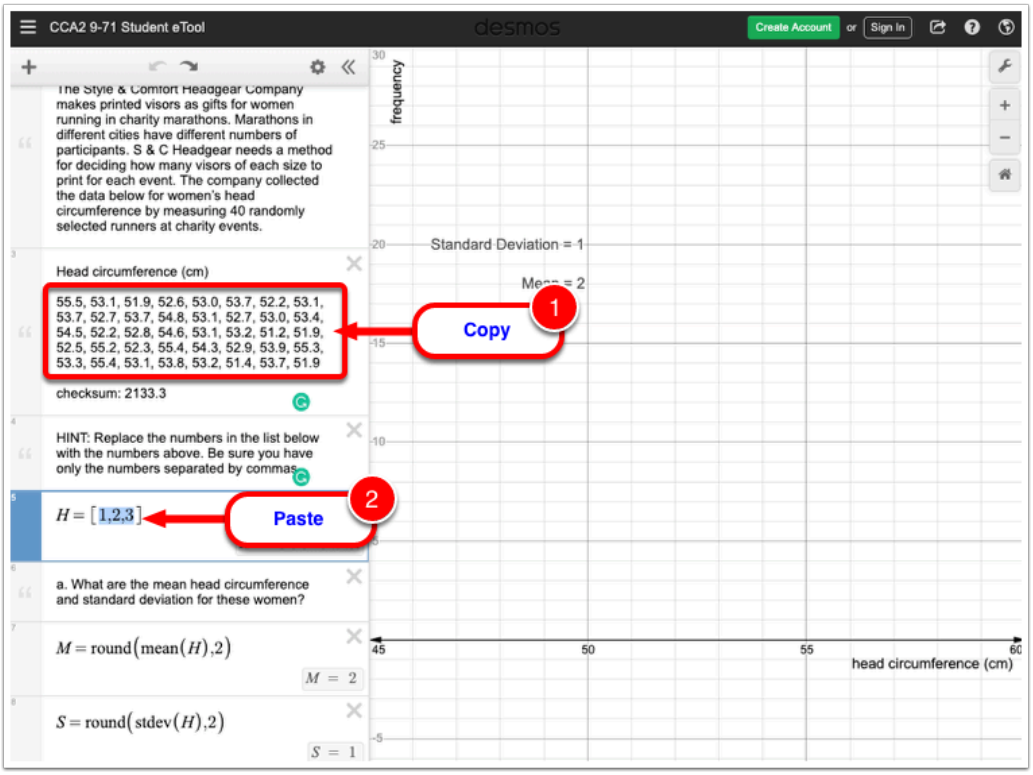
Use this eTool to create a histogram and complete problem 9-71.

Create a histogram:

1. Copy the given data set on line 3.

2. Highlight the numbers in the list on line 5 and paste the copied date set.

NOTE: Numbers must be separated by commas ‘,’.

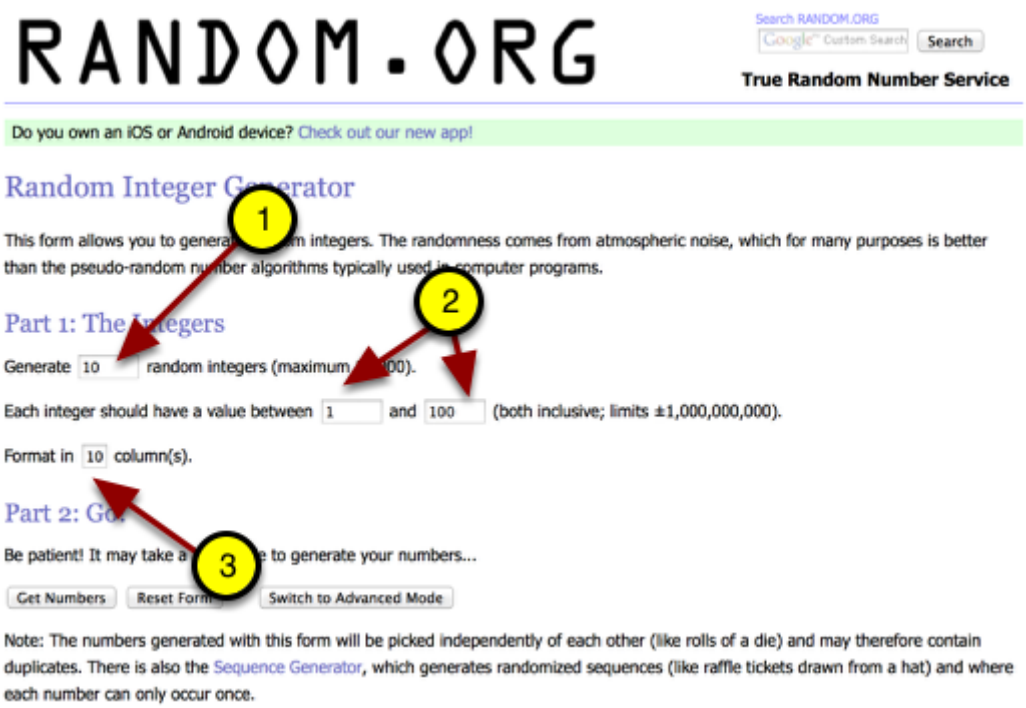


CCA2 9.1.2: RNG Online

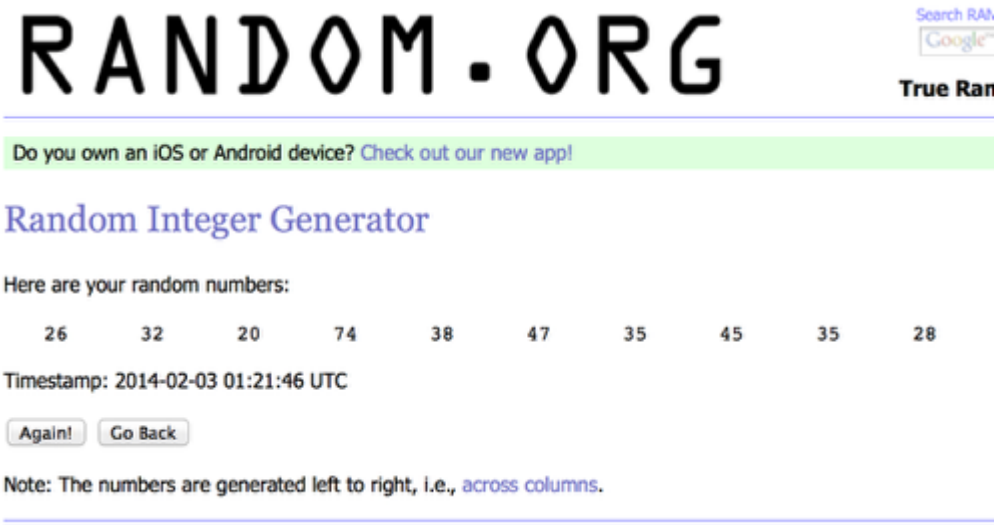
Click on the link below for the “Random Number Generator (or) RNG Online"

RNG online

1. Choose the settings below.



2. Possible results:



Chapter 10

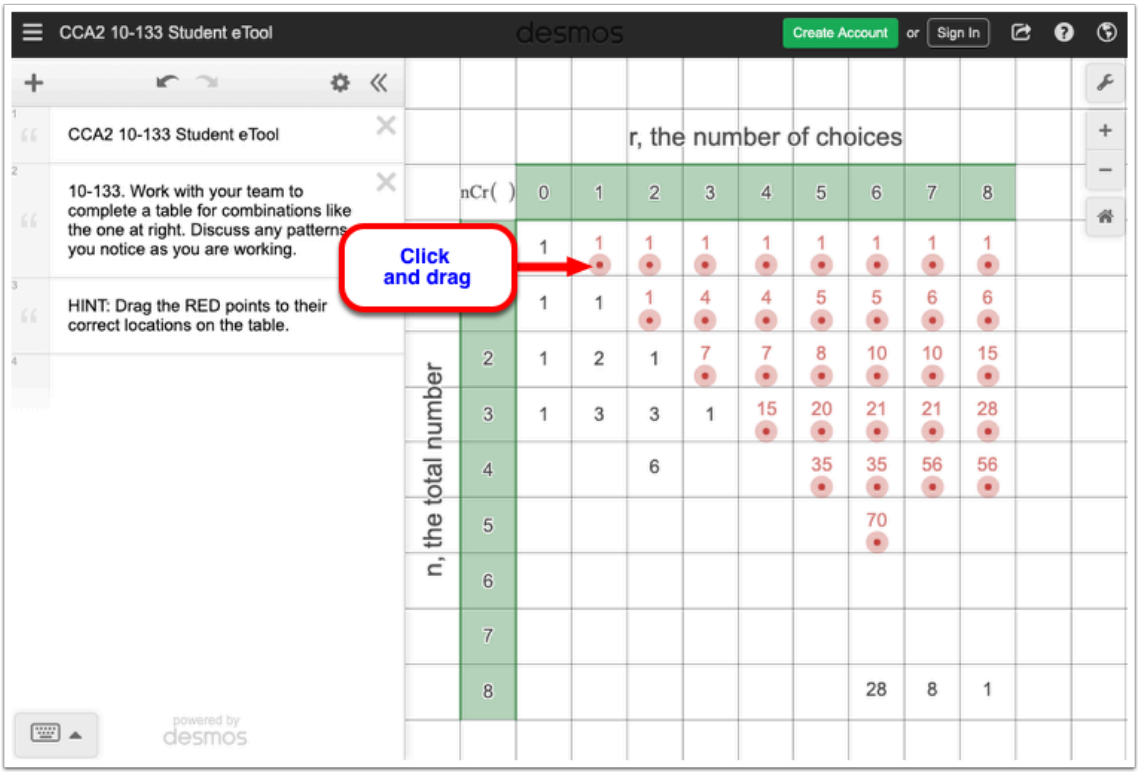
CCA2 10.3.1: 10-133 Student eTool (Desmos)

Click on the link below to access eTool.

10-133 Student eTool (Desmos)

Use this eTool to complete problem 10-133.

1. Click each RED point and drag to the correct location on the table.

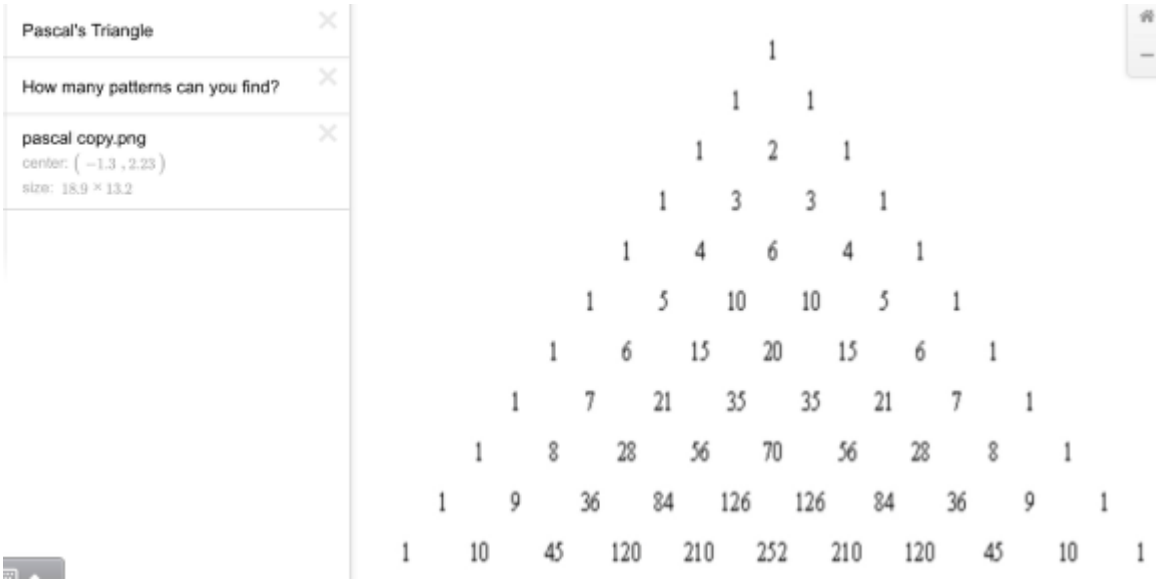


CCA2 10.3.1: Pascal's Triangle (Desmos)

Click on the link below for the “Pascal's Triangle (Desmos)."

Pascal's Triangle (Desmos)

1. There are 11 rows of Pascal's triangle starting with the 0th row, "1" at the top.



Chapter 11

CCA2 11.1.1: 11-1 Student eTool (CPM)

Click on the link below to access eTool.

11-1 Student eTool (CPM)

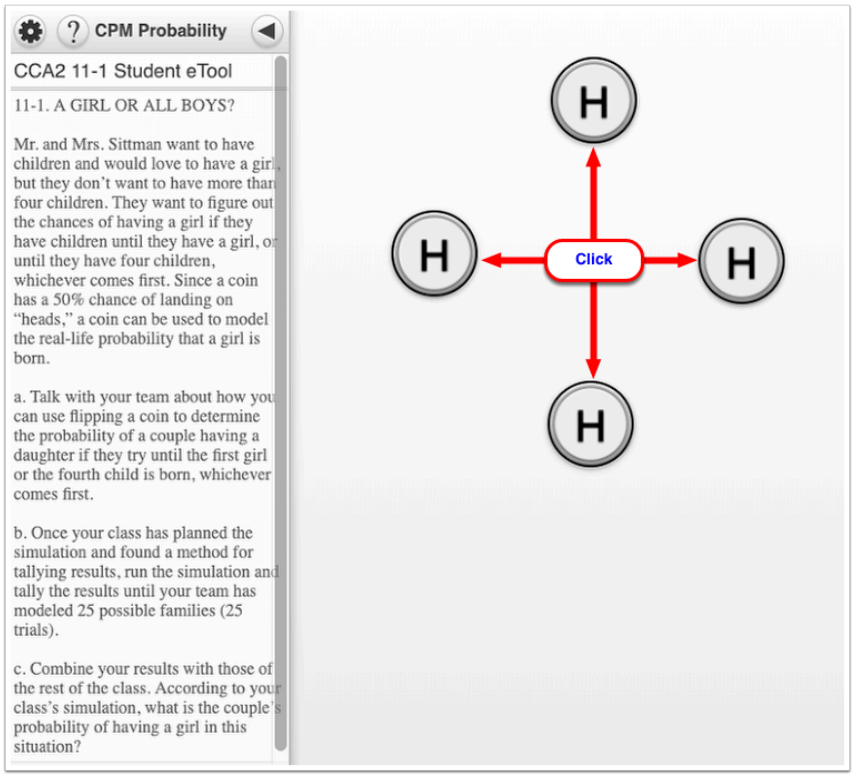
Use this eTool to complete problem 11-1.

Flip the coins to determine the probability of a couple having a daughter.

'H' - is for heads

'T' - is for tails

1. Click the coins to flip.



CCA2 11.1.1: 11-2 Student eTool (CPM)

Click on the link below to access eTool.

11-2 Student eTool (CPM)

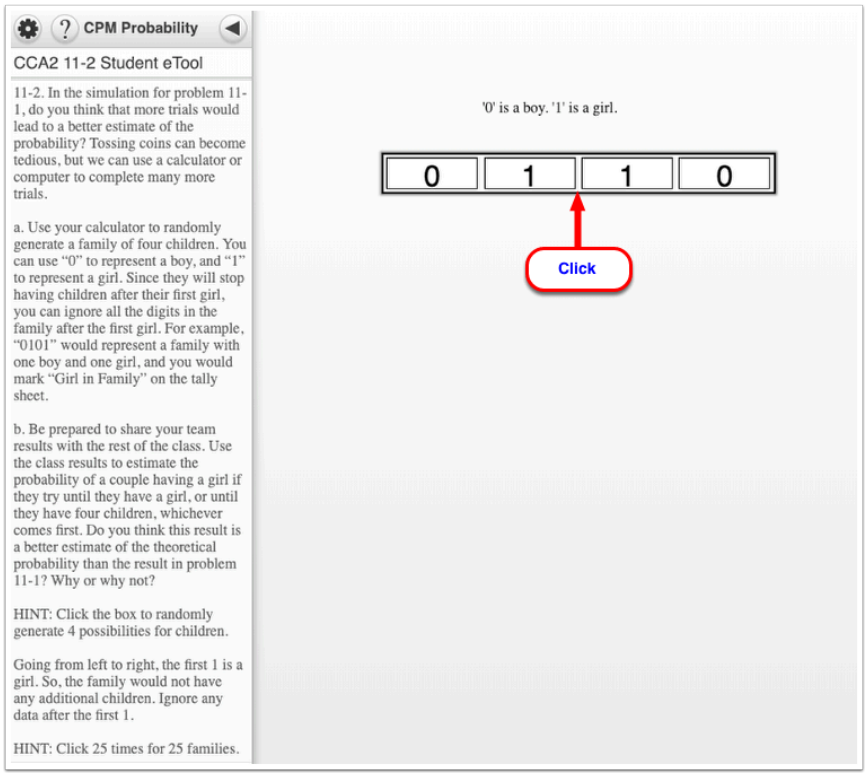
Use this eTool to determine the probability of having a boy or a girl.

1. Click the box to generate 4 possibilities for children.

NOTE: Click 25 times for 25 families.

'0' – represent a boy

'1' – represent a girl

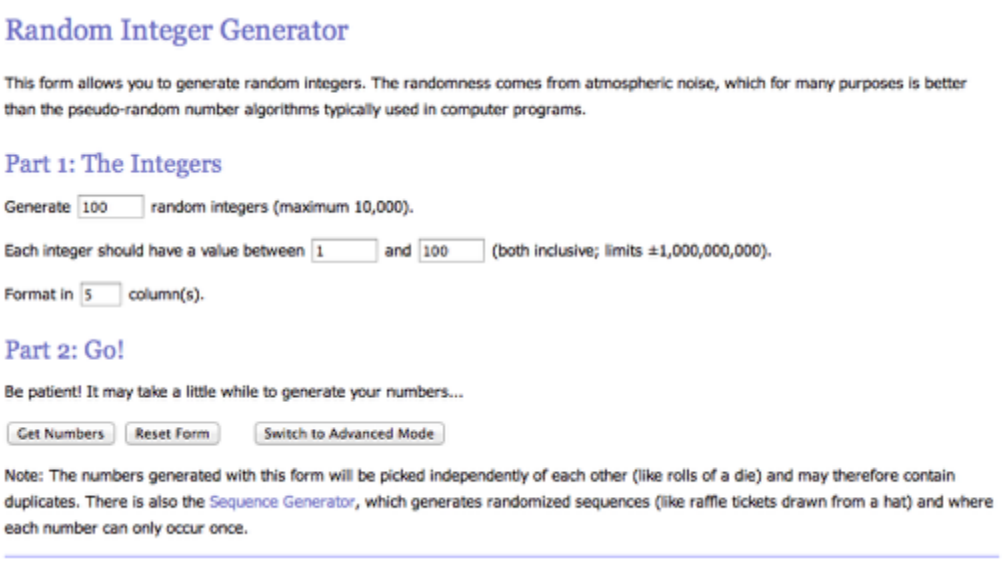


CCA2 11.1 & 11.2: Random Number Generator online

Click on the links below.

Random.org online

Choose your settings.



Random Integer Generator

This form allows you to generate random integers. The randomness comes from atmospheric noise, which for many purposes is better than the pseudo-random number algorithms typically used in computer programs.

Part 1: The Integers

Generate 100 random integers (maximum 10,000).

Each integer should have a value between 1 and 100 (both inclusive; limits ±1,000,000,000).

Format in 5 column(s).

Part 2: Go!

Be patient! It may take a little while to generate your numbers...

Get Numbers | Reset Form | Switch to Advanced Mode

Note: The numbers generated with this form will be picked independently of each other (like rolls of a die) and may therefore contain duplicates. There is also the Sequence Generator, which generates randomized sequences (like raffle tickets drawn from a hat) and where each number can only occur once.

CCA2 11.2.4 7-73 & 7-74 Student eTools (Desmos)

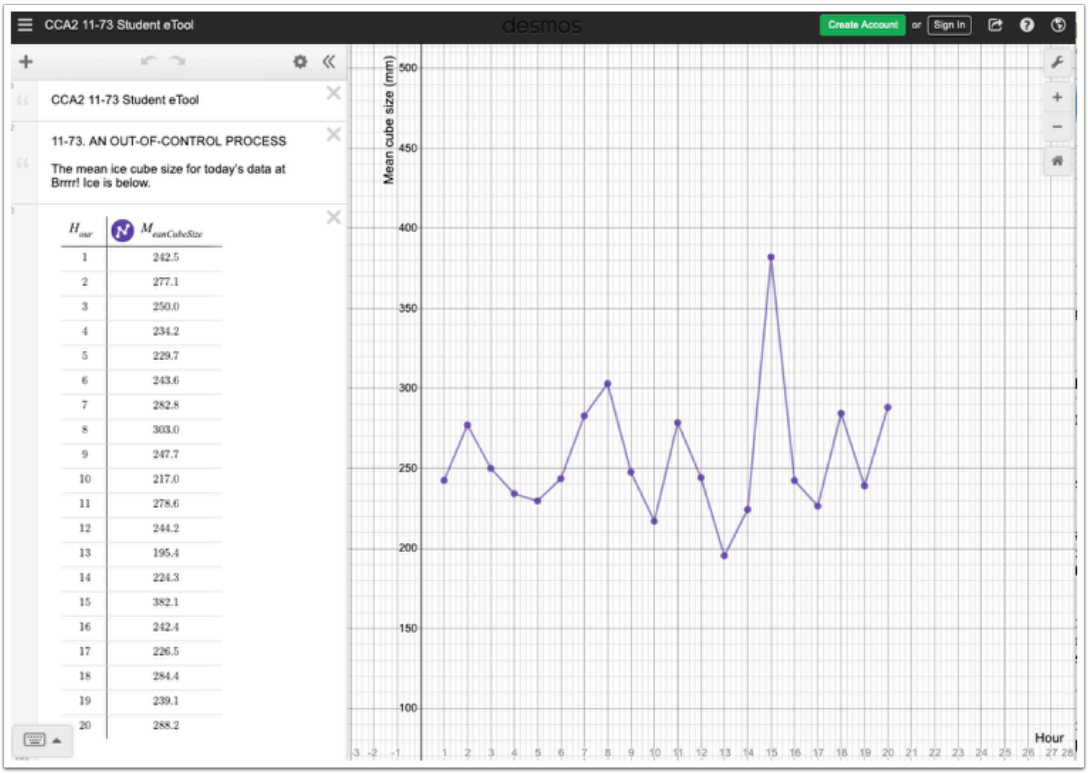
Click on the links below to access eTools.

11-73 Student eTool (Desmos)
11-74 Student eTool (Desmos)

x-Bar Process Control Charts

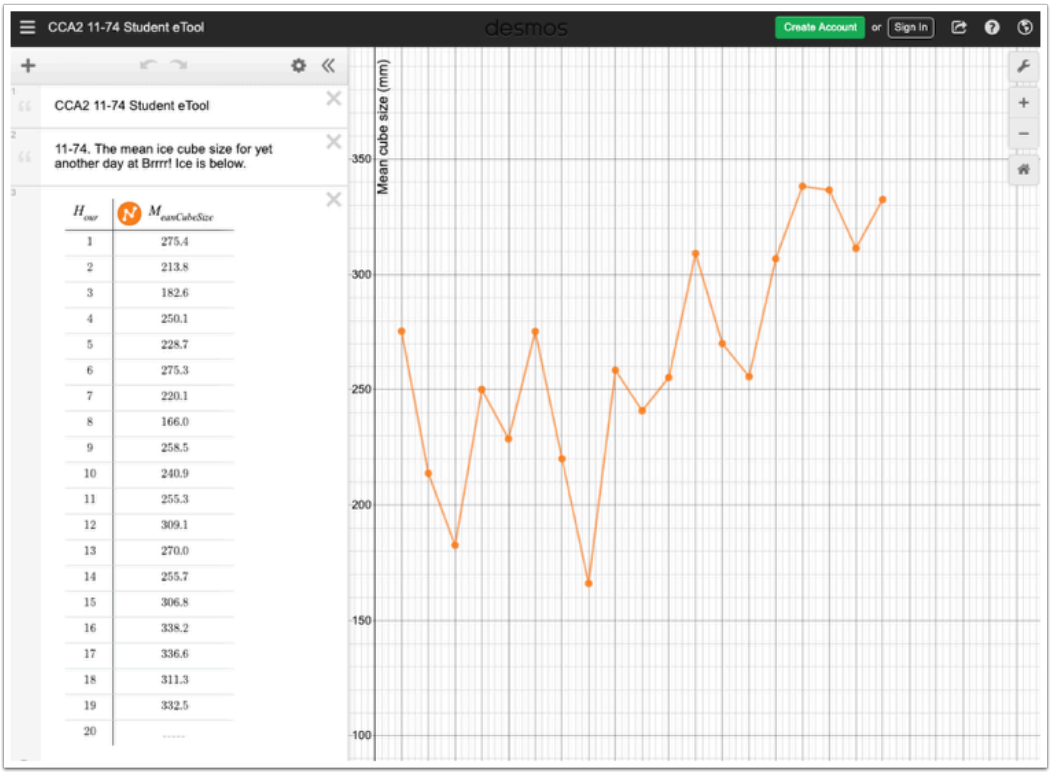
Use the following eTools to complete problems 11-73 and 11-74.

7-73: x-Bar Control Chart



H_{our}	$M_{eanCubeSize}$
1	242.5
2	277.1
3	250.0
4	234.2
5	229.7
6	243.6
7	282.8
8	303.0
9	247.7
10	217.0
11	278.6
12	244.2
13	195.4
14	224.3
15	382.1
16	242.4
17	226.5
18	284.4
19	239.1
20	288.2

7-74: An Out-of-Control Process



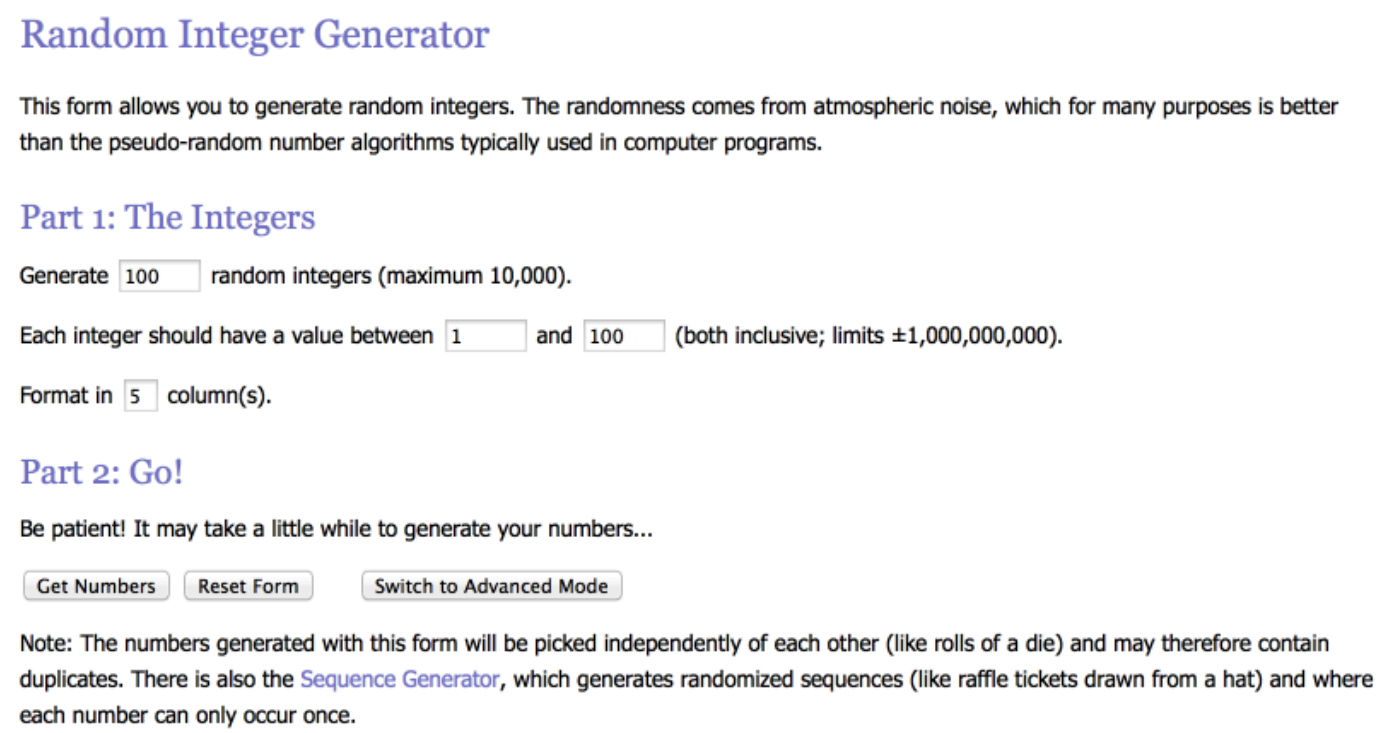
H_{our}	$M_{eanCubeSize}$
1	275.4
2	213.8
3	182.6
4	250.1
5	228.7
6	275.3
7	220.1
8	166.0
9	258.5
10	240.9
11	255.3
12	309.1
13	270.0
14	255.7
15	306.8
16	338.2
17	336.6
18	311.3
19	332.5
20	.....

CCA2 11.2.1: Random.org online & 11-37 eTool (CPM) & Data Representations (CPM)

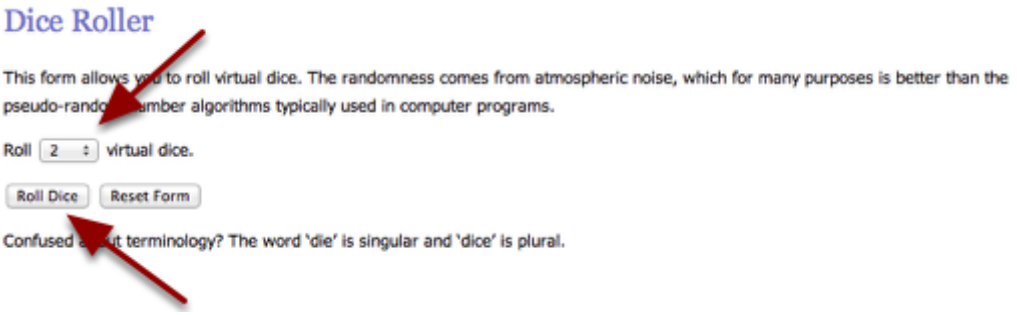
Click on the links below.

Data Representations (CPM)
11-37 Student eTool (CPM)
Random Number Generator online

1. Use for 11-37 to generate 25 numbers between 1 and 100. Choose the appropriate settings.

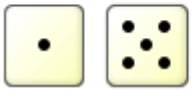


2. Select the number of dice and click "Roll Dice".



3. You can roll as many times as needed.

You rolled 2 dice:



Timestamp: 2014-02-02 03:13:38 UTC

Roll Again Go Back

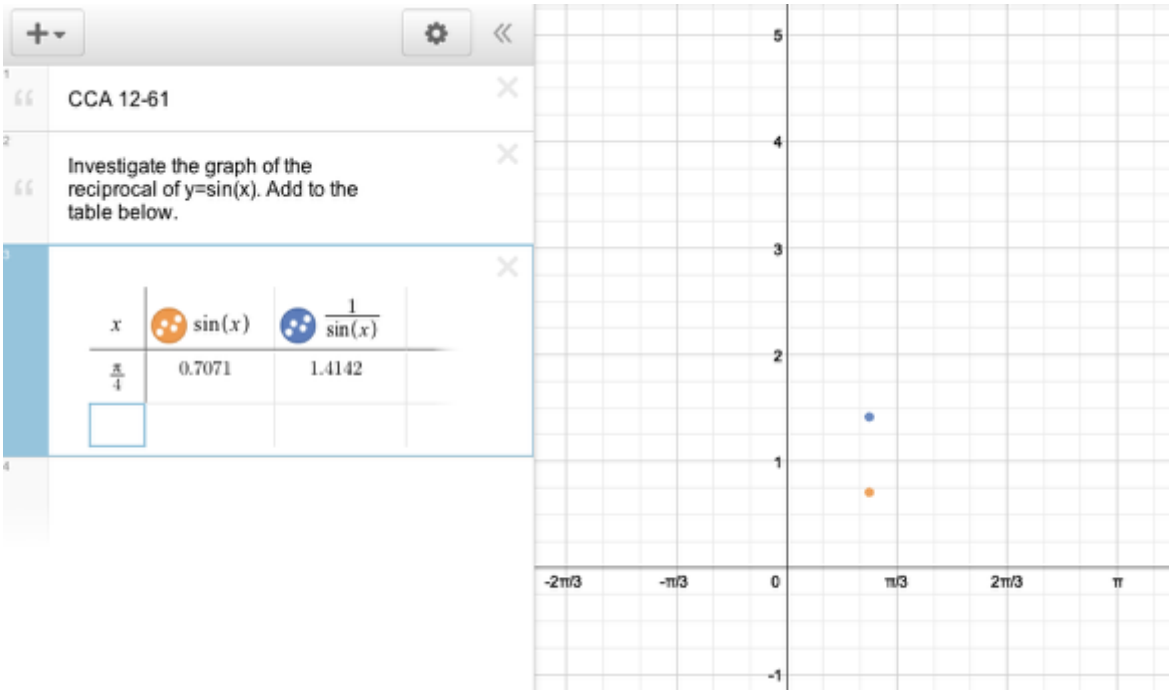
Chapter 12

CCA2 12.1.4: 12-61 (1/sinx) Student eTool (Desmos)

Click on the link below for the “12-61 (1/sinx) Student eTool (Desmos)."

12-61 (1/sinx) Student eTool (Desmos)

1. Explore the reciprocal of the sine graph.

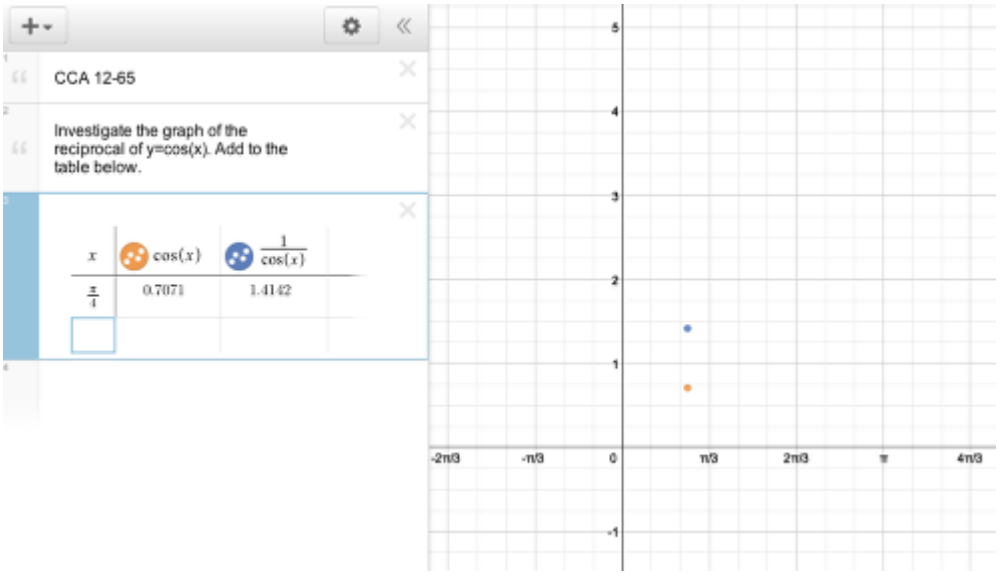


CCA2 12.1.4: 12-65 (1/cosx and 1/tanx) Student eTool (Desmos)

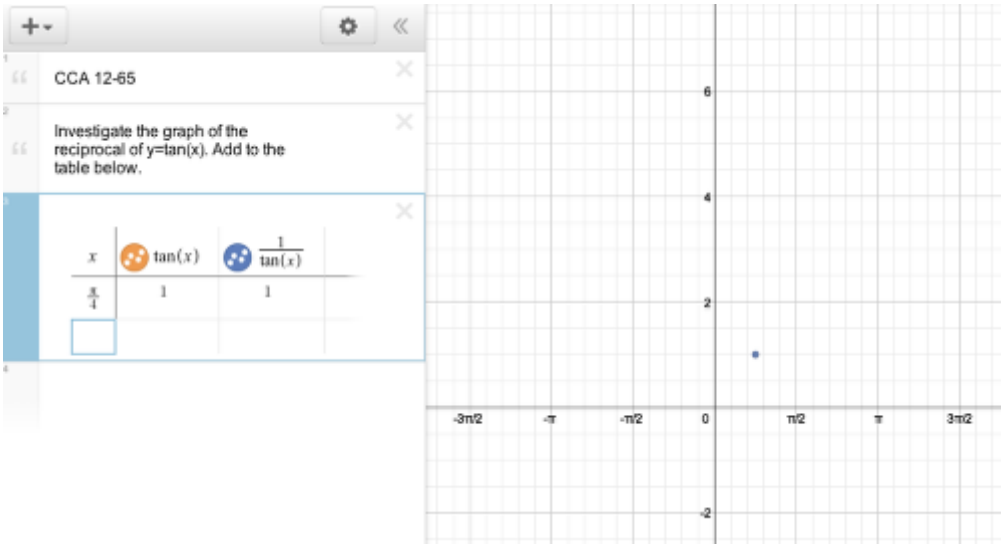
Click on the link below for the "12-65 (1/cosx and 1/tanx) Student eTool (Desmos)."

12-65 (1/cosx) Student eTool (Desmos)
12-65 (1/tanx) Student eTool (Desmos)

1. Explore the reciprocal of the cosine graph.



2. Explore the reciprocal of the tangent graph.

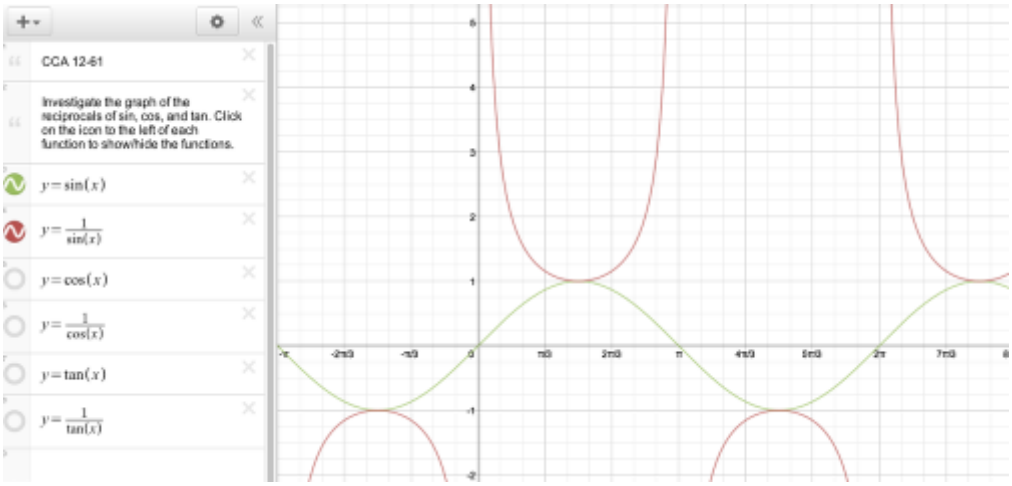


CCA2 12.1.4: 12-61 & 12-65 Answer eTool (Desmos)

Click on the link below for the “12-61 & 12-65 Answer eTool (Desmos)."

12-61 & 12-65 Answer eTool (Desmos)

1. Click on the circles one at a time to view the reciprocal functions.



2. View all graphs.

Appendix A

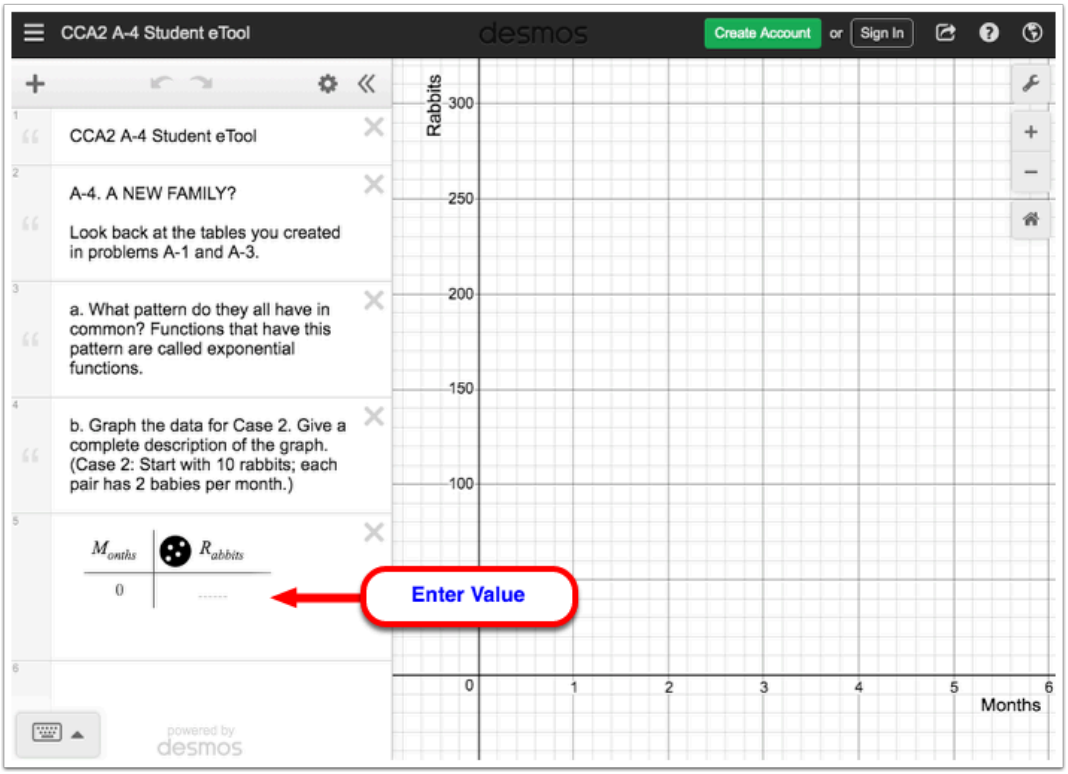
CCA2 A.1.1: A-4 Student eTool (Desmos)

Click on the link below to access eTool.

A-4 Student eTool (Desmos)

Use this eTool to complete part (b) of problem A-4.

1. Complete the table on line 5.



CCA2 A.2.1: A-42 Student eTool (Desmos)

Click on the link below to access eTool.

A-42 Student eTool (Desmos)

Use this eTool to complete the task in problem A-42.

Your Task: Working together, organize the sequences into families of similar sequences. Your team will need to decide how many families to make, what common features make the sequences a family, and what characteristics make each family different from the others. Read and carry out the directions that follow. As you work, use the following questions to help guide your team's discussion.

Discussion Points:

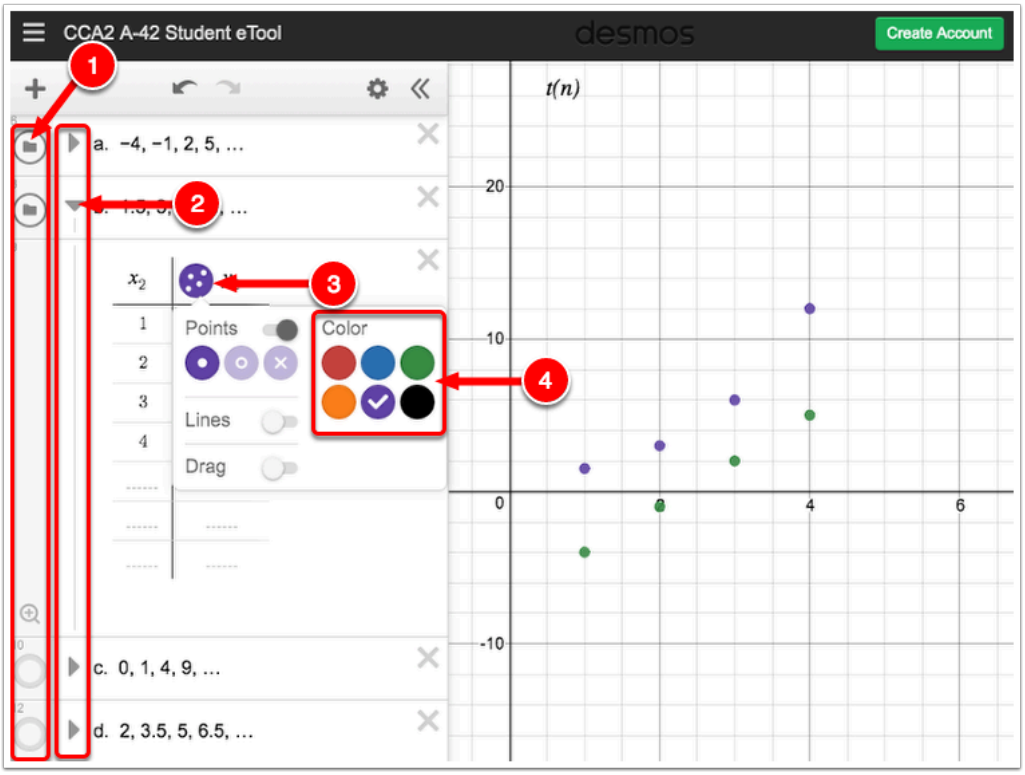
- How can we describe the pattern?
- How does it grow?
- What do they have in common?

1. Click the circle at left of each part starting on line 6 to show/hide the graph.

2. Click the arrow to show/hide the table.

3. Click and hold on the colored circle on the table to view the settings.

4. Select the color you want to use to group the graphs.



CCA2 A.3.1: A-84 Student eTool (Desmos)

Click on the link below to access eTool.

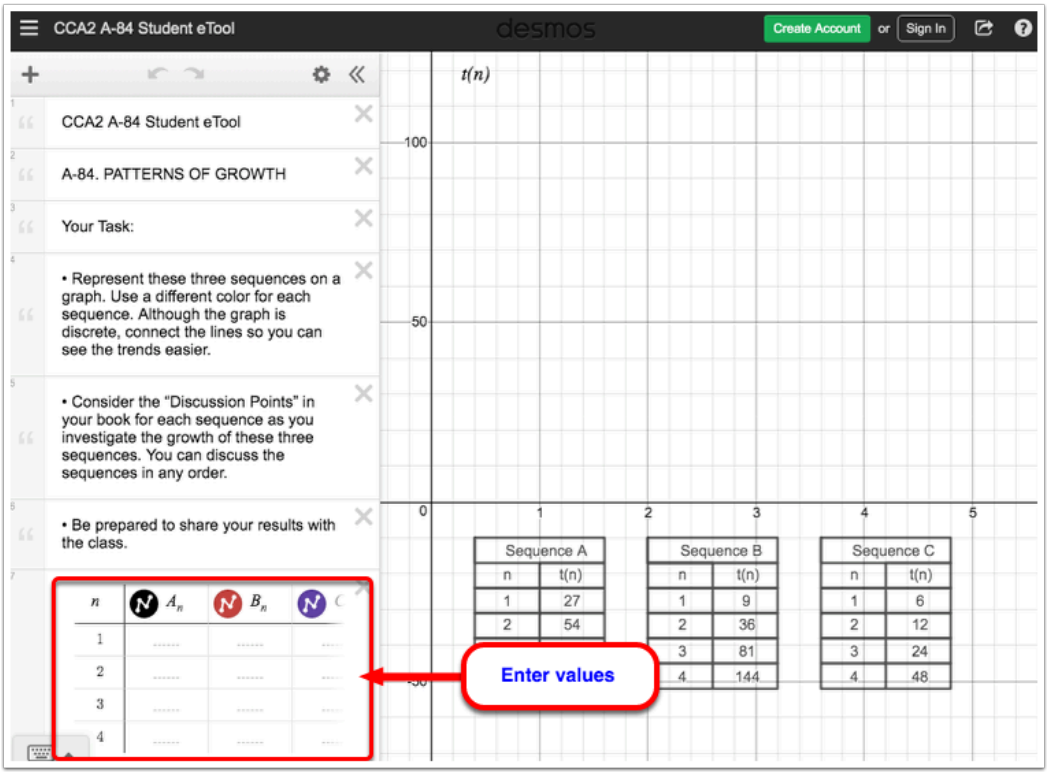
A-84 Student eTool (Desmos)

Use this eTool to help you visualize the patterns of growth and complete the task in problem A-84.

Your Task:

- Represent these three sequences on a graph. Use a different color for each sequence. Although the graph is discrete, connect the lines so you can see the trends easier.
- Consider the discussion points below for each sequence as you investigate the growth of these three sequences. You can discuss the sequences in any order.
- Be prepared to share your results with the class.

1. Complete the table in line 7.



Appendix B

CCA2 B.1.1: B-2 Student eTool (Desmos)

Click on the link below to access eTool.

B-2 Student eTool (Desmos)

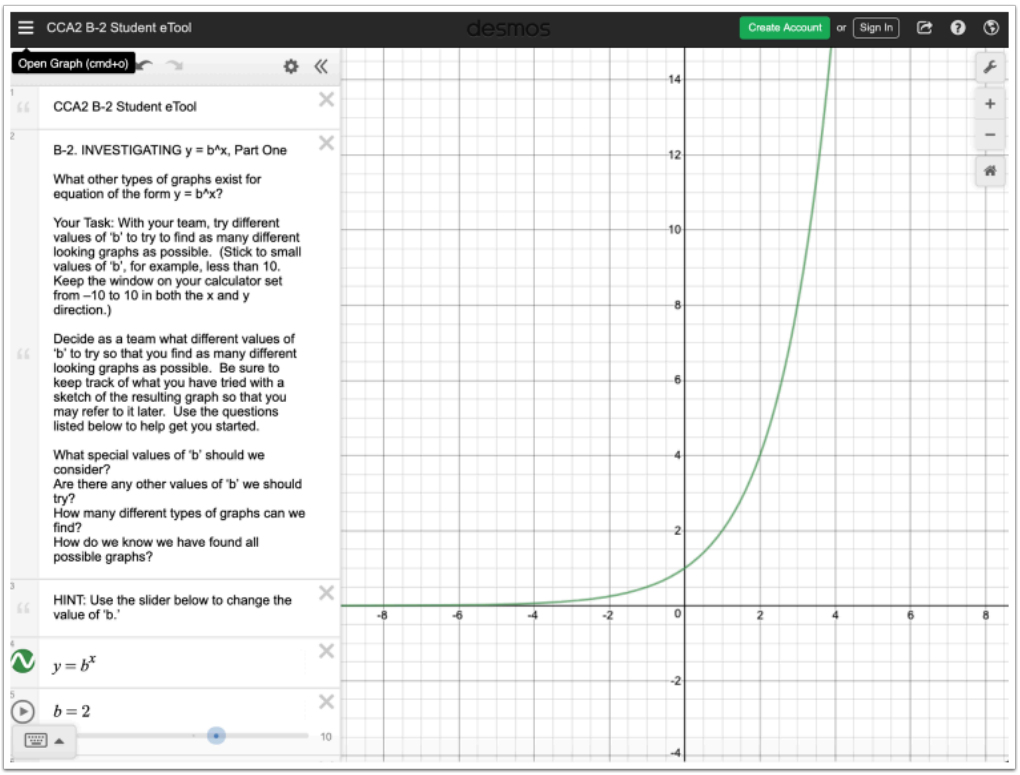
Use this eTool to investigate other types of graphs exist for equation of the form:

$$y = b^x$$

Your Task: With your team, try different values of *b* to try to find as many different looking graphs as possible.

Note: Stick to small values of *b*, for example, less than 10. Keep the window on your calculator set from –10 to 10 in both the *x* and *y* direction.

1. Click on the BLUE point (slider) and drag horizontally to change the value of 'b'.



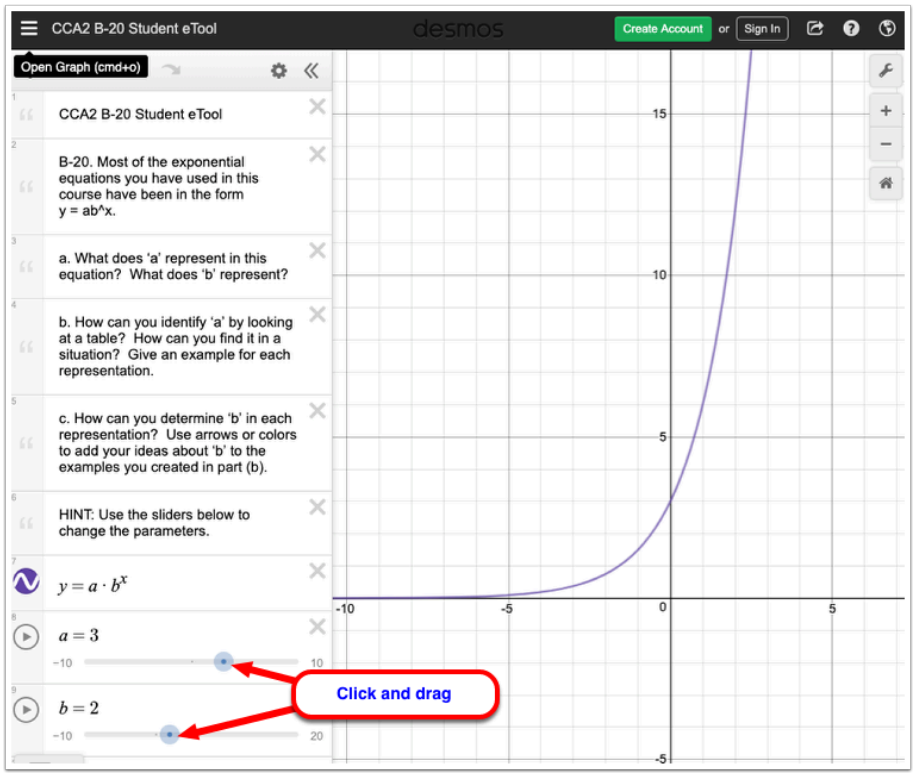
CCA2 B.1.2: B-20 Student eTool (Desmos)

Click on the link below to access eTool.

B-20 Student eTool (Desmos)

Use this eTool to explore multiple representations of exponential functions.

1. Click on the BLUE points (sliders) on lines 8 and 9 and drag horizontally to change the parameters.



CCA2 B.1.4: B-40 & B-41 Student eTool (Desmos)

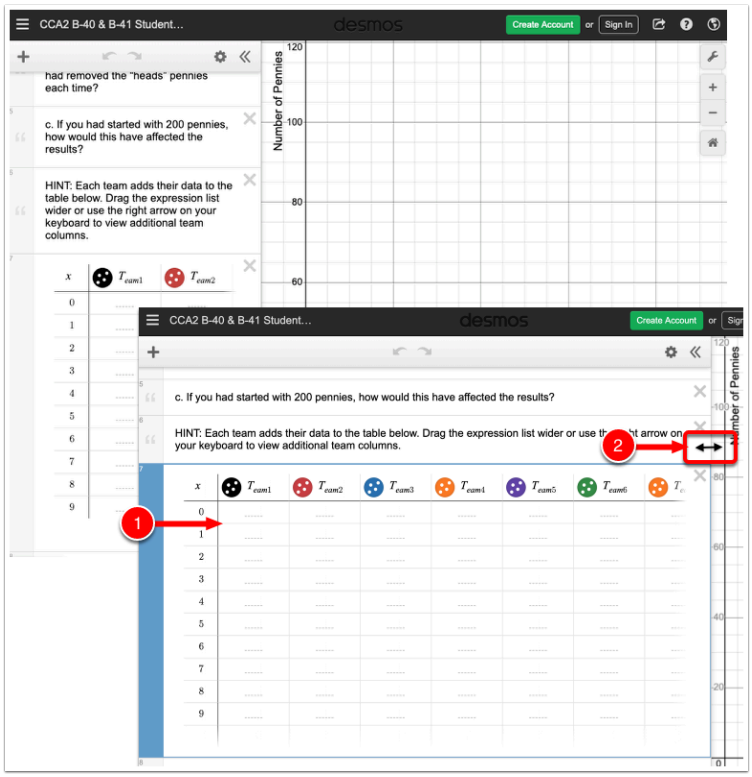
Click on the link below to access eTool.

B-40 & B-41 Student eTool (Desmos)

Use this eTool to complete the tasks in problems B-40 and B-41.

1. Enter the data for each team in the table in line 7.

2. Expand the expression panel to view the columns in the the table.

2.1. Hover your mouse to right side of the panel until you see the double-sided arrow cursor.

2.2. Click and drag to adjust the size of the panel.