Graspable Math with Geogebra

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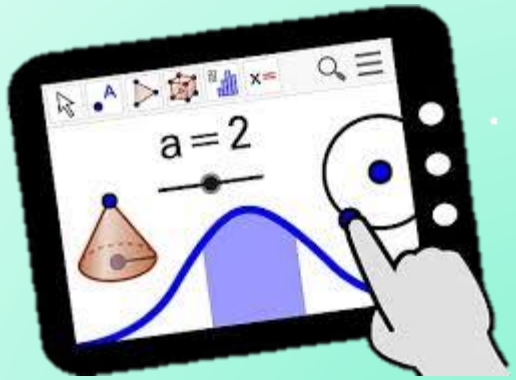
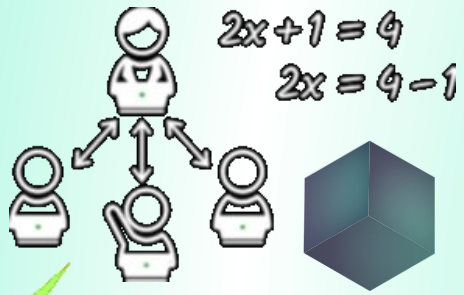
Thiruvarur dt ,Tamilnadu



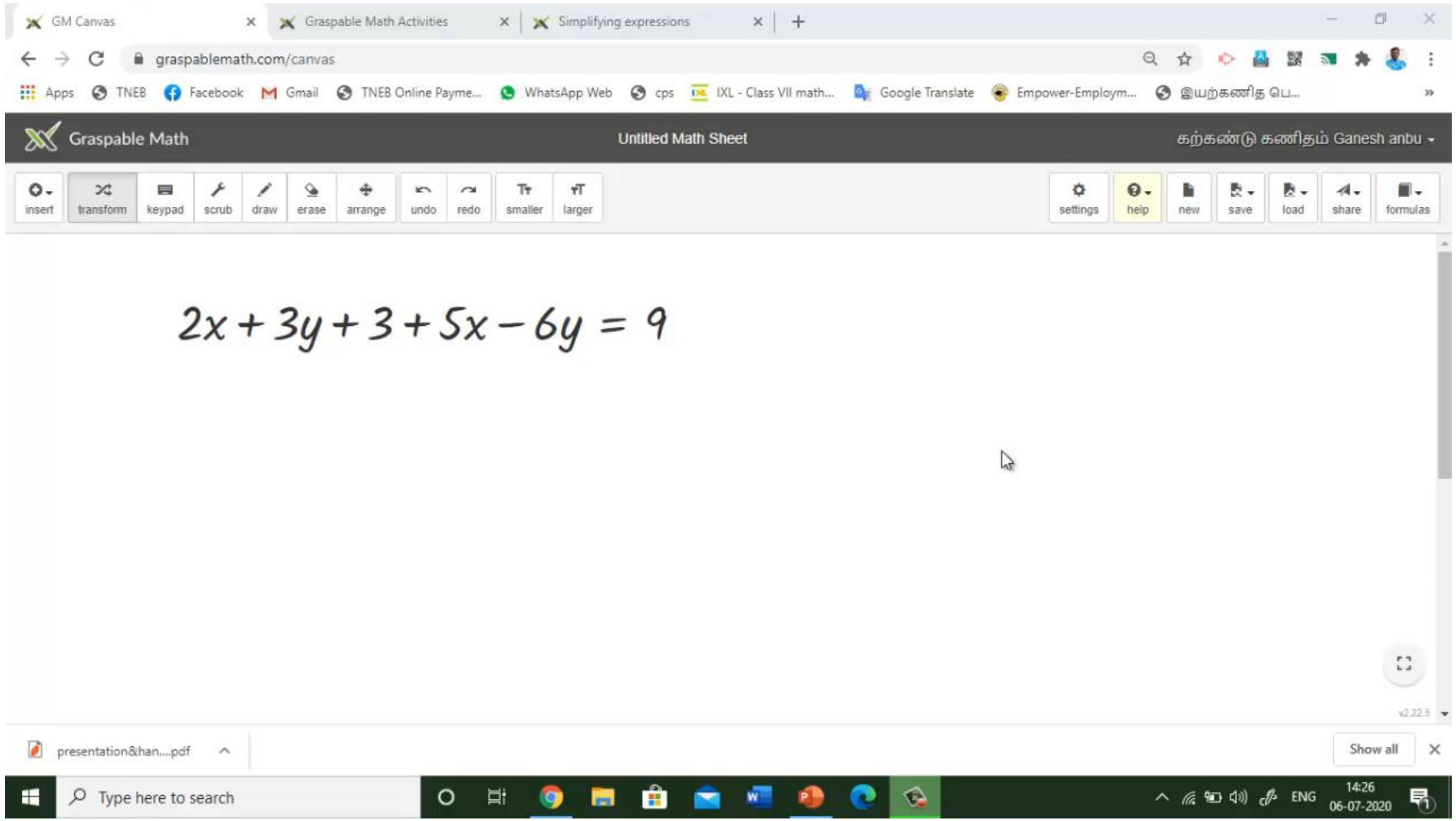


Graspable Math

A Dynamic Algebra Notation

Graspable Math

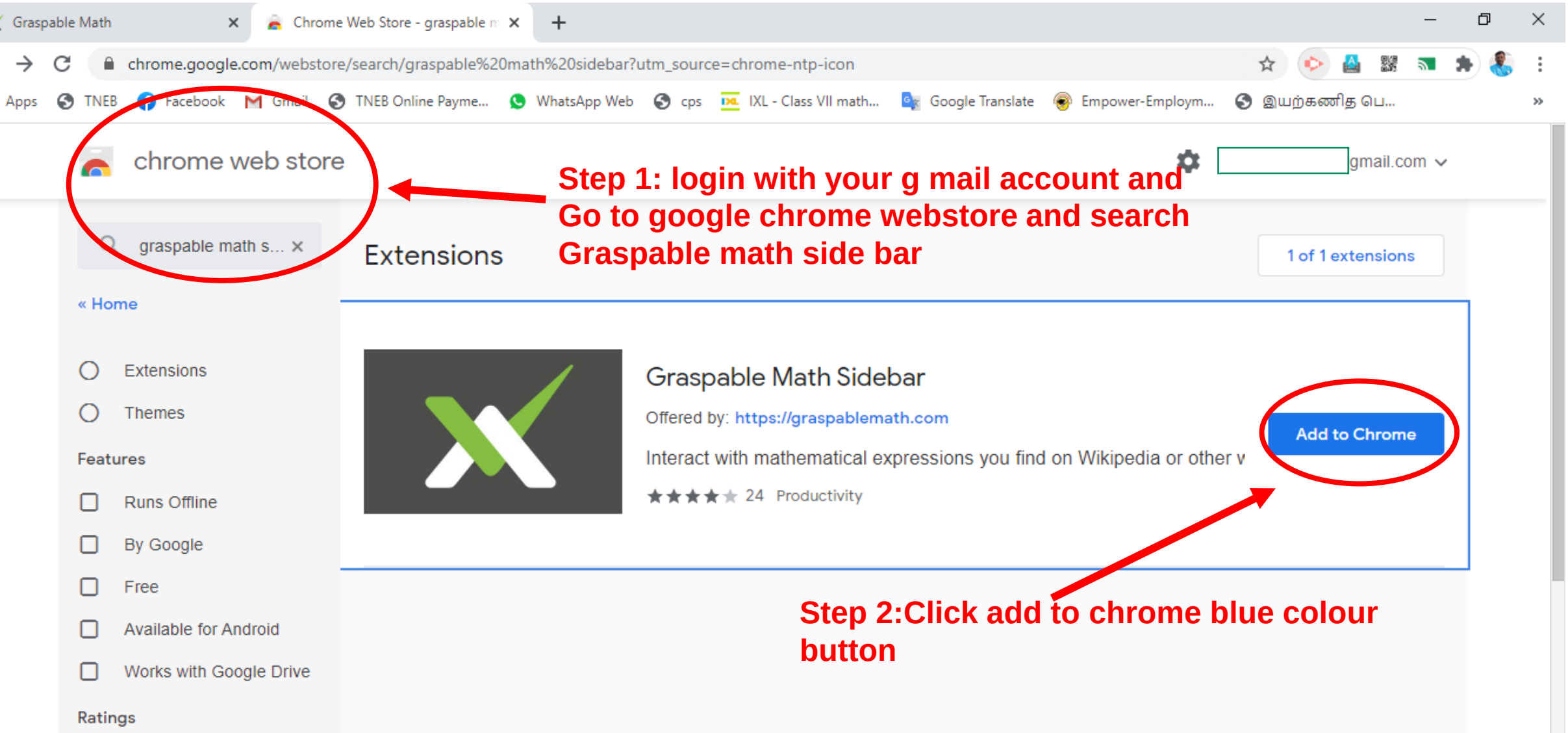
- Mathematical equations and expressions
- Graspable—they are objects you can see and touch and move.
- In Graspable Math, expressions are transformed by simple gestures that resemble actually physical interactions
-

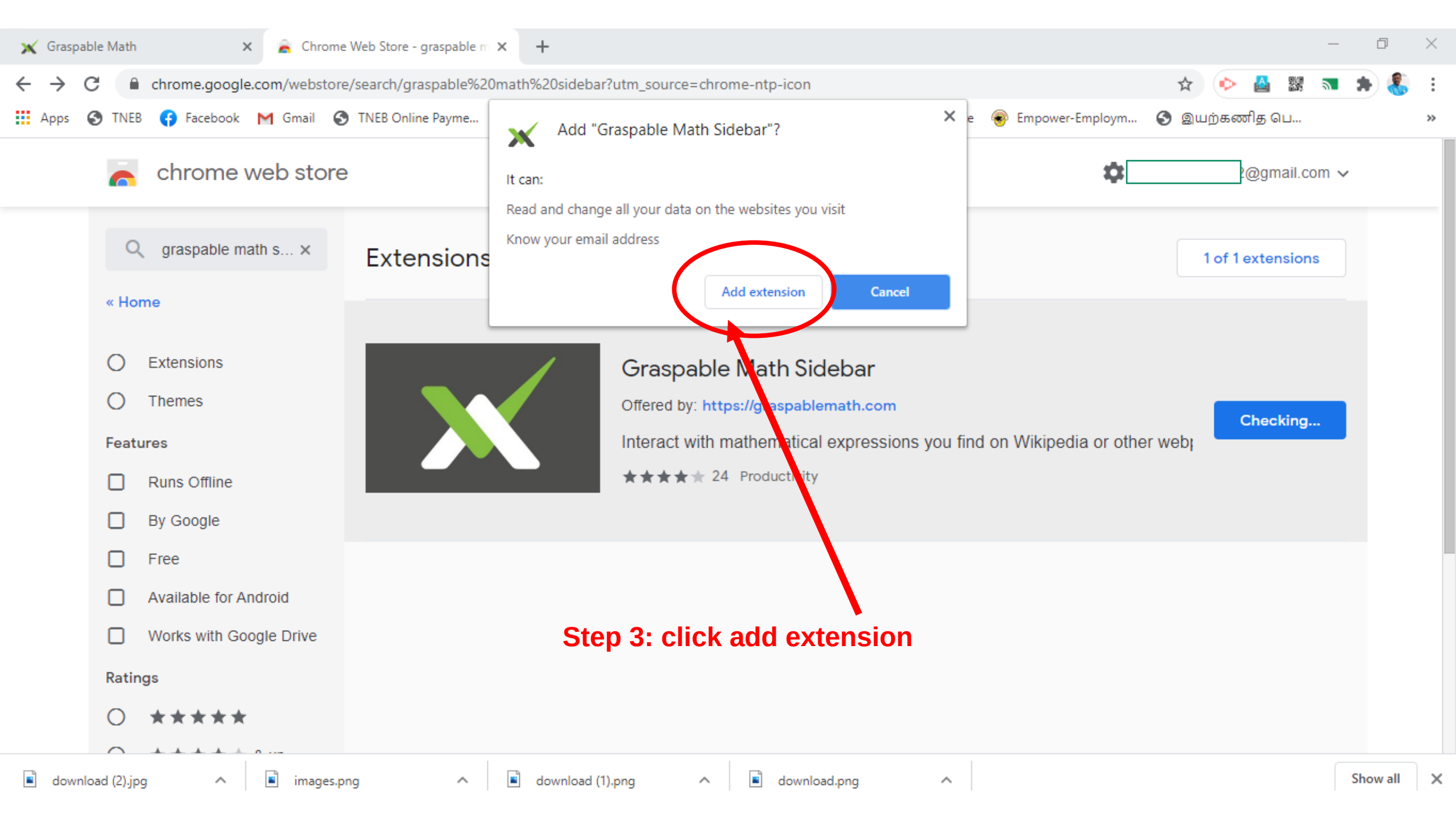


Graspable Math

- Expressions can be dragged across the interface and expanded to reveal factors.
- Numbers can be split open with simple swipes and canceled out with diagonal lines.
- The user can moves an expression from one position (“Here”) to another goal position (“There”).
- Users discover operational laws and algebraic malleability
- Following mathematical rules and algebraic notation
- Allowing the students to access to the power and beauty of the Mathematical structure

Graspable Math is a google chrome add on

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Add "Graspable Math Sidebar"?
It can:
Read and change all your data on the websites you visit
Know your email address
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Step 3: click add extension
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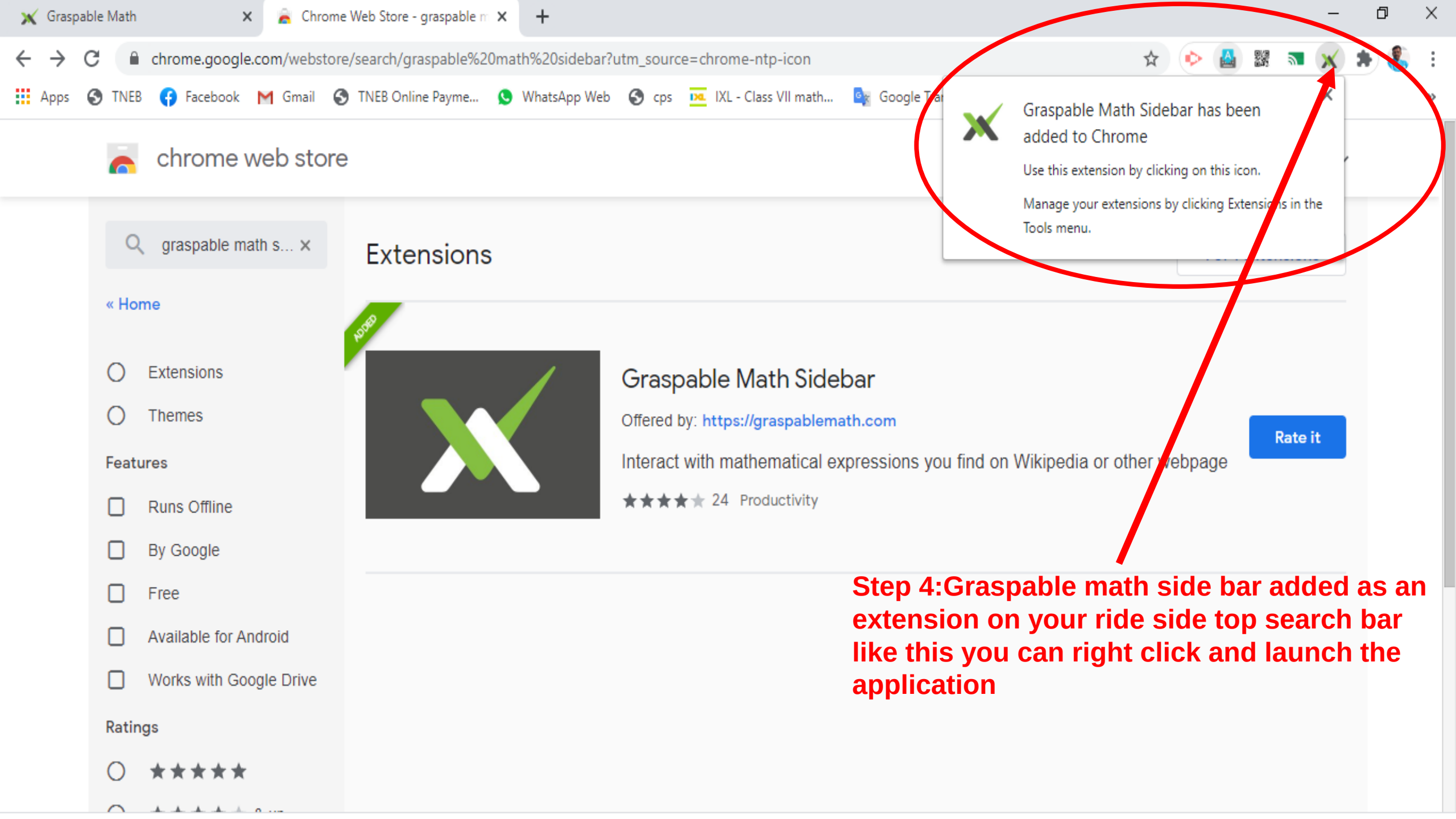
Graspable Math
Chrome Web Store - graspable
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Apps
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Facebook
Gmail
TNEB Online Payme...
WhatsApp Web
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IXL - Class VII math...
Graspable Math Sidebar has been added to Chrome
Use this extension by clicking on this icon.
Manage your extensions by clicking Extensions in the Tools menu.
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Features
Runs Offline
By Google
Free
Available for Android
Works with Google Drive
Ratings
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Graspable Math Sidebar
Offered by: https://graspablemath.com
Interact with mathematical expressions you find on Wikipedia or other webpage
24 Productivity
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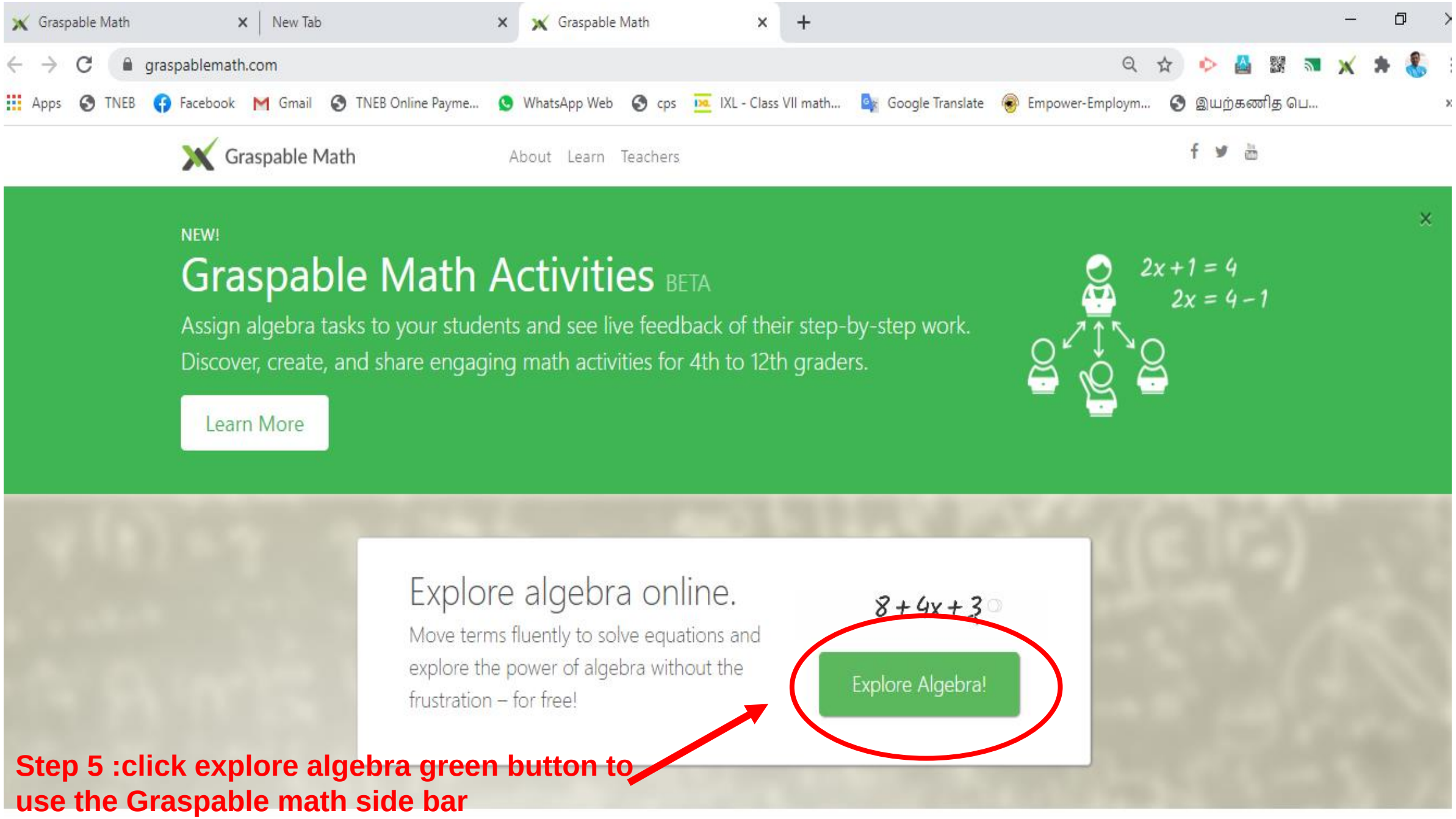
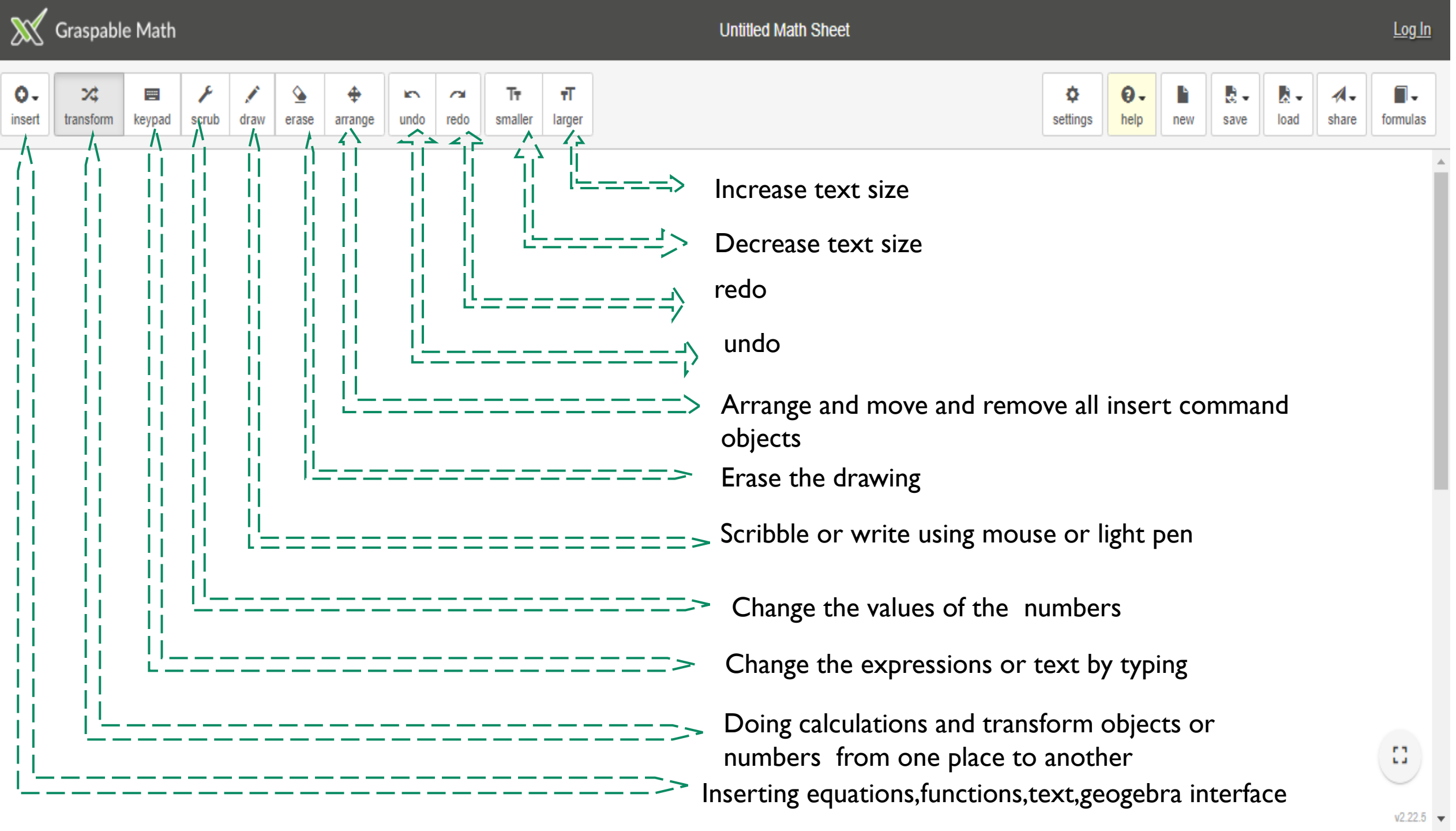
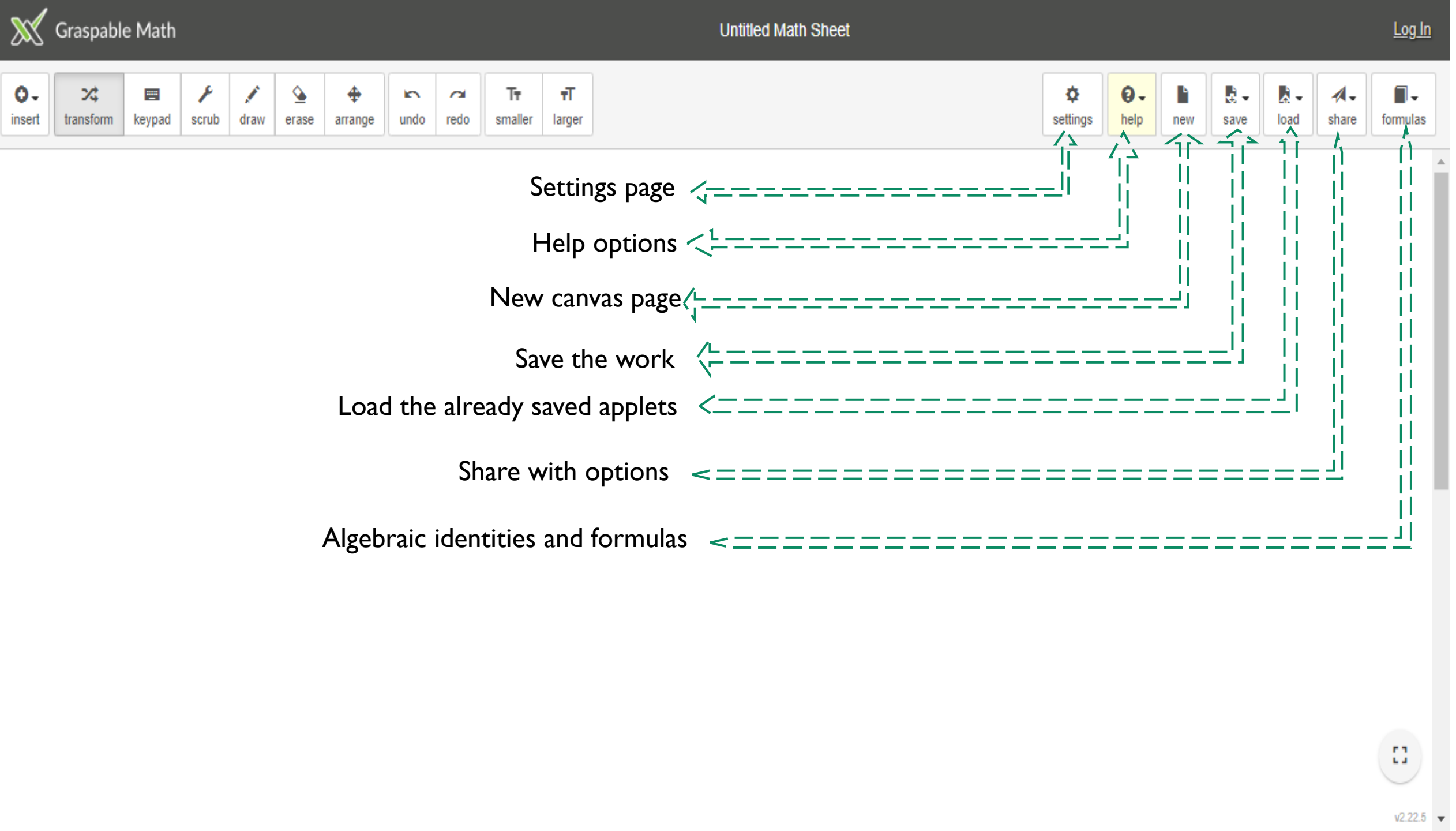
Step 4:Graspable math side bar added as an extension on your ride side top search bar like this you can right click and launch the application



Step 5 :click explore algebra green button to use the Graspable math side bar


Graspable Math
Untitled Math Sheet
Log In
insert
transform
keypad
scrub
draw
erase
arrange
undo
redo
smaller
larger
settings
help
new
save
load
share
formulas
Increase text size
Decrease text size
redo
undo
Arrange and move and remove all insert command objects
Erase the drawing
Scribble or write using mouse or light pen
Change the values of the numbers
Change the expressions or text by typing
Doing calculations and transform objects or numbers from one place to another
Inserting equations,functions,text,geogebra interface
v2.22.5


Graspable Math
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Log In
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formulas
Settings page
Help options
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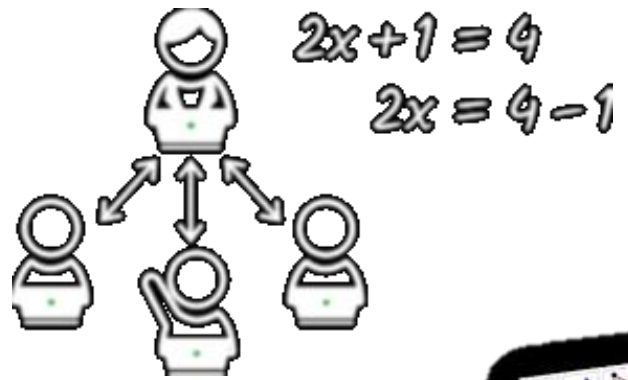
Share with options
Algebraic identities and formulas
v2.22.5

Integration of Graspable Math with Geogebra



Graspable Math

A Dynamic Algebra Notation

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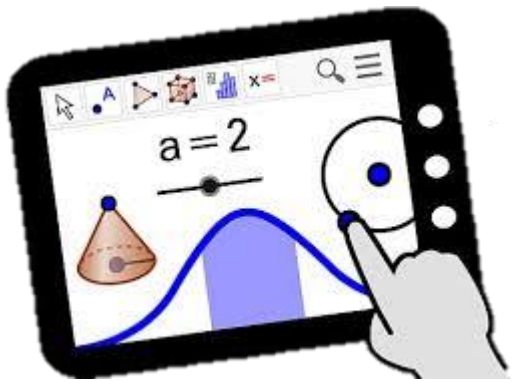


Inserting Math expressions

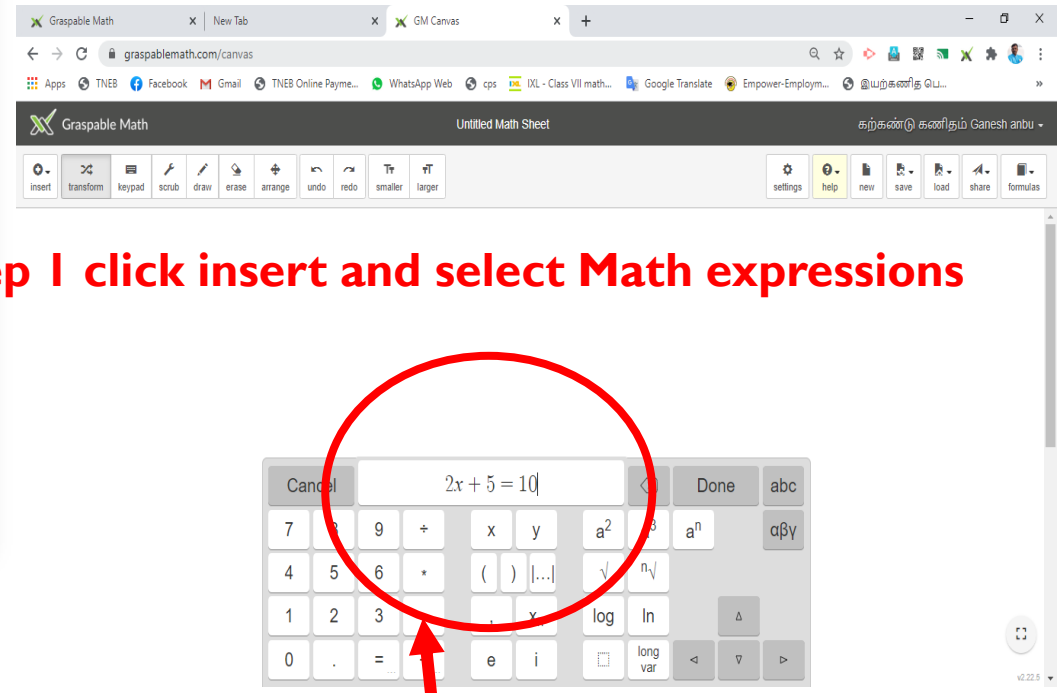
Graspable Math

கற்கண்டு கணிதம் Ganesh anbu

insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas

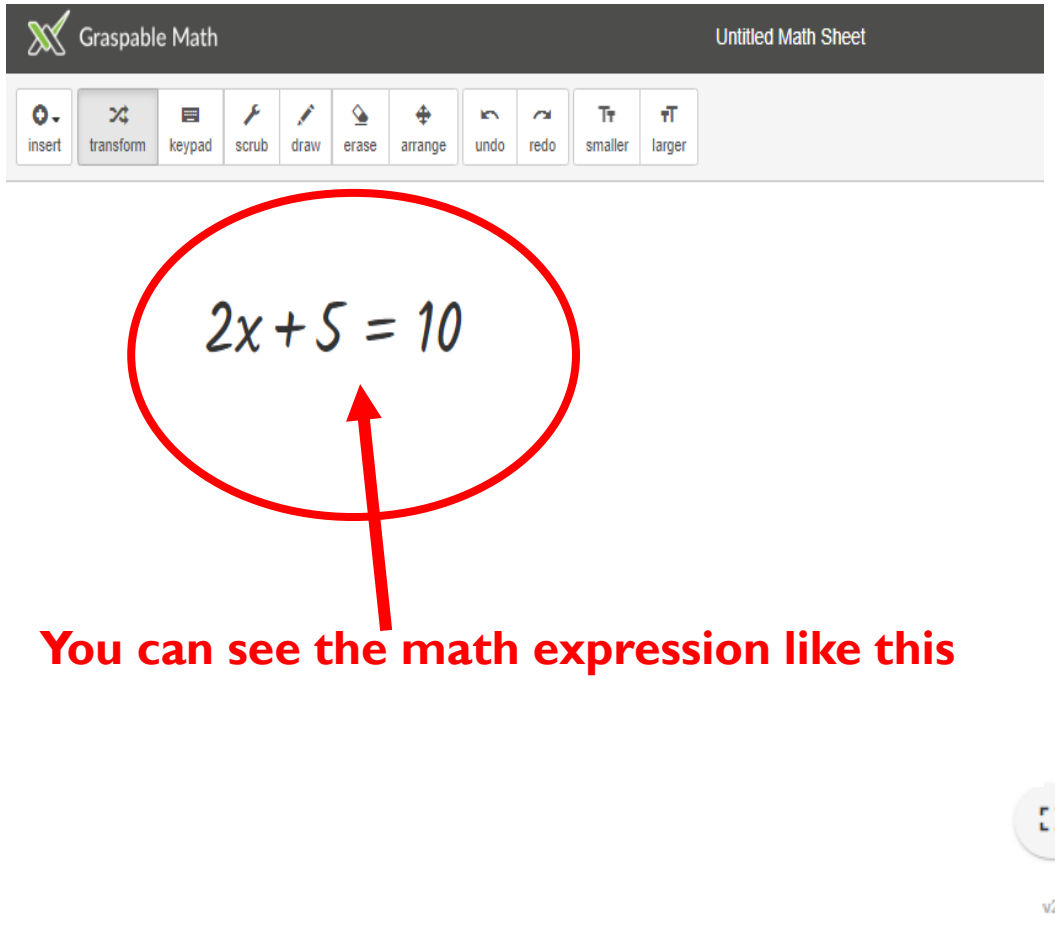
select one:

- Math Expression
- Function
- Text
- Youtube Video
- Graphing
- Geometry
- Geometry 3D



Step 1 click insert and select Math expressions

Step 2 type the Math expressions and click done



You can see the math expression like this

Inserting Functions

Graspable Math

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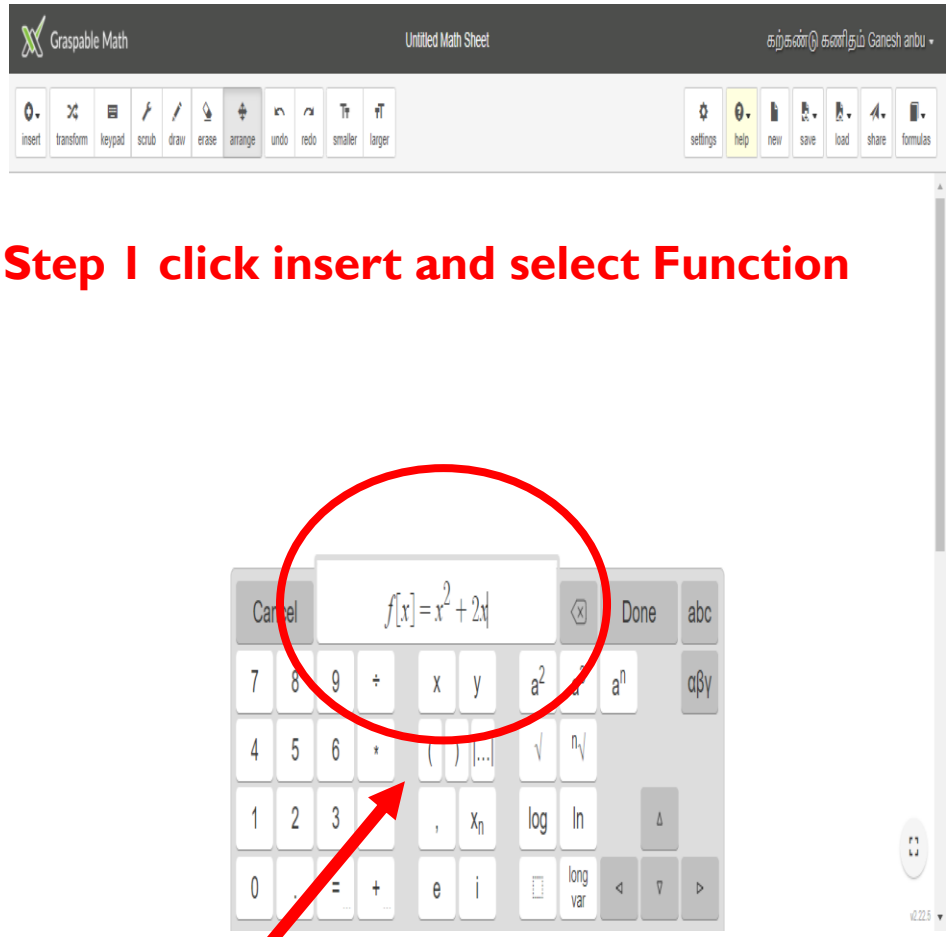
insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas

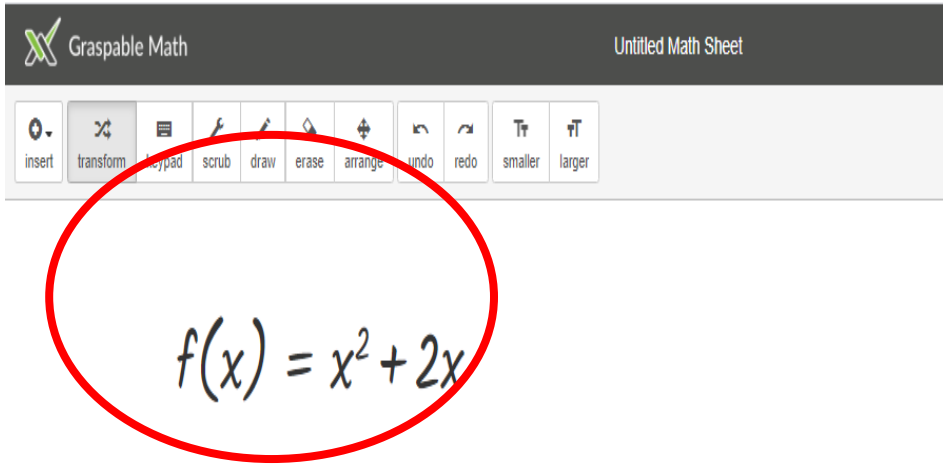
select one:

- Math Expression
- Function
- Text
- Youtube Video
- Graphing
- Geometry
- Geometry 3D



Step 1 click insert and select Function

Step 2 type the Function and click done



You can see the function like this

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Inserting Geogebra graphing calculator

Graspable Math

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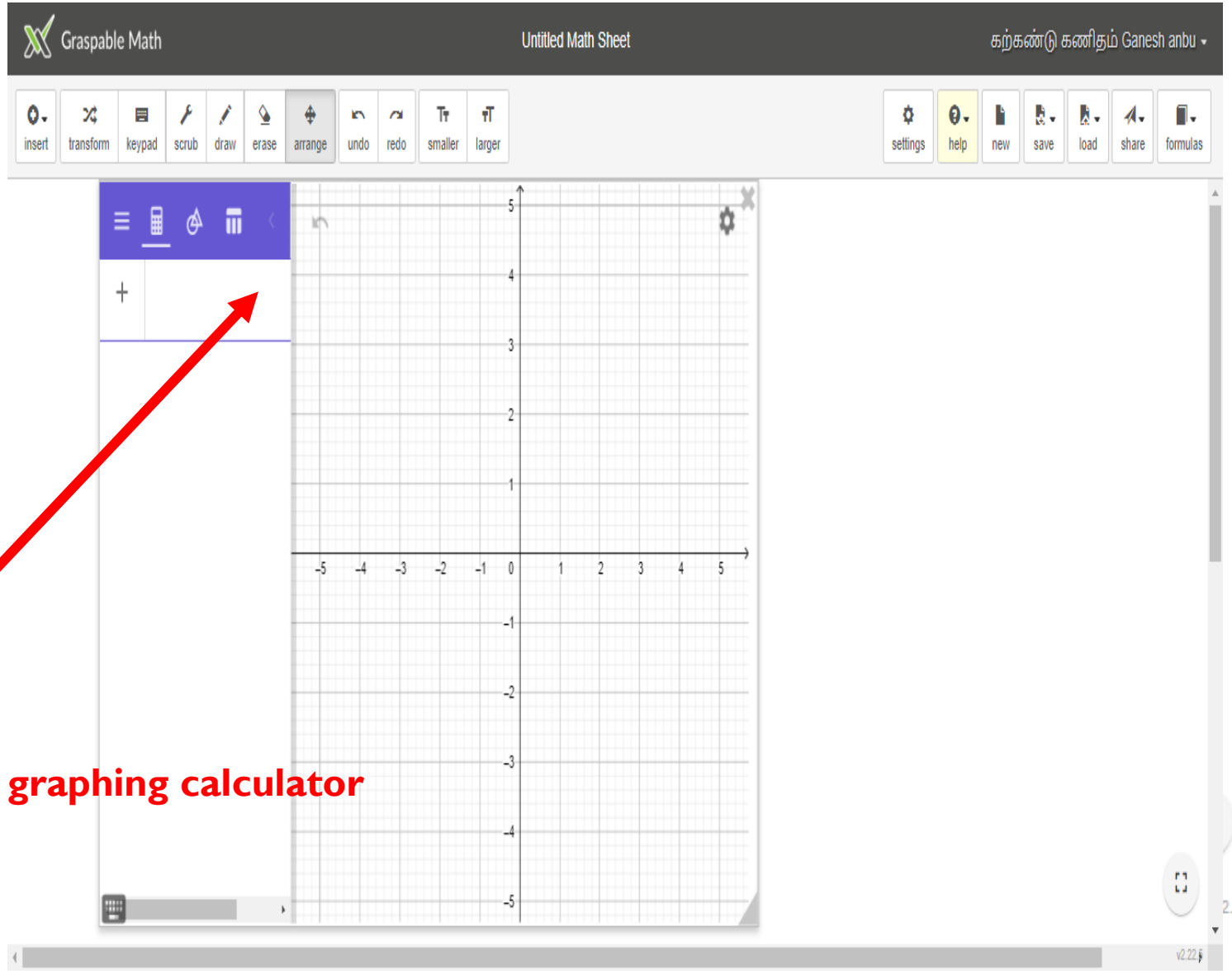
insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas

select one:

- Math Expression
- Function
- Text
- Youtube Video
- Graphing
- Geometry
- Geometry 3D

Step 1 click insert and select Graphing



Step 2 You can see the geogebra graphing calculator interface added to the screen

Inserting Geogebra geometry

Graspable Math

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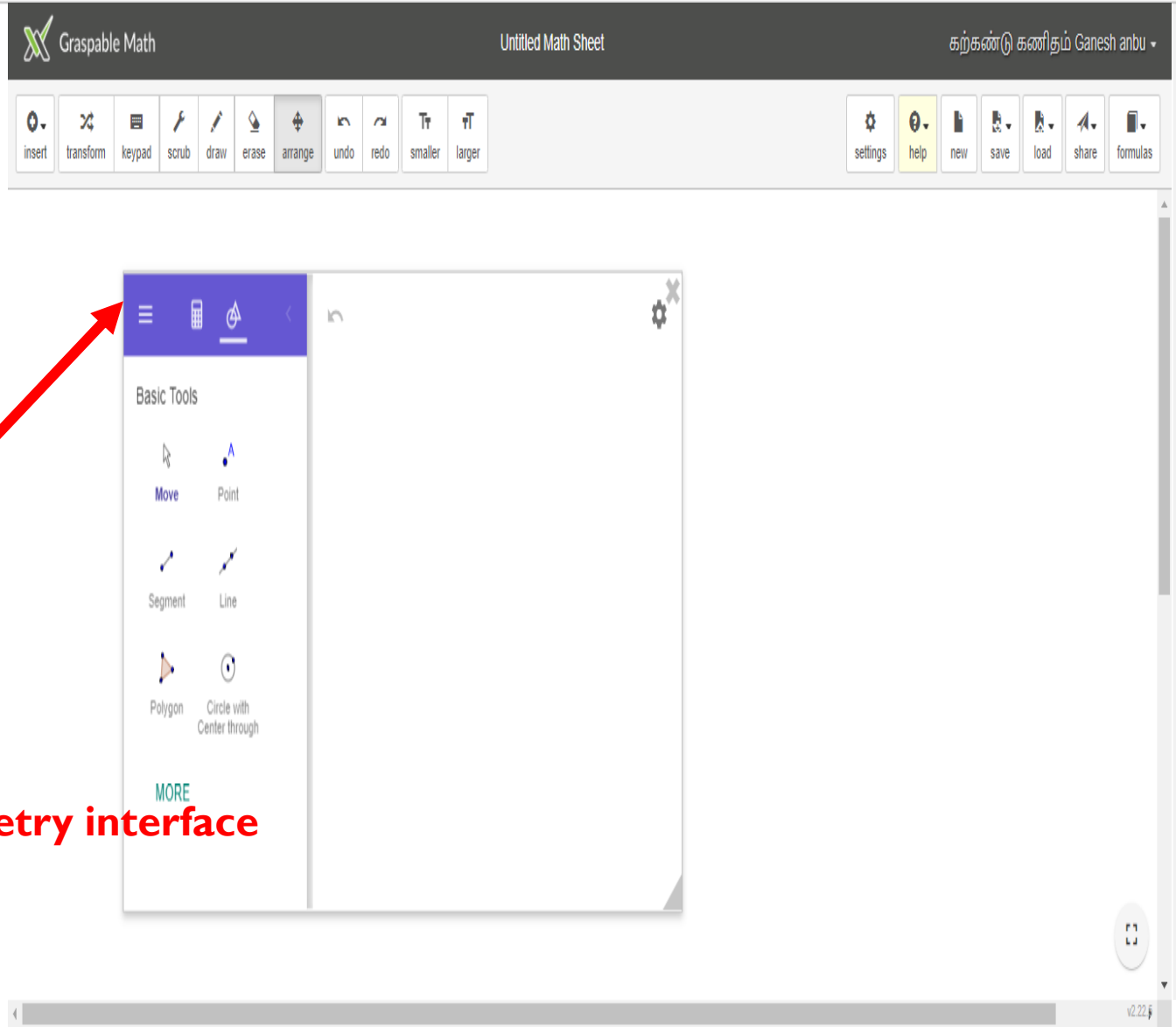
insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas

select one:

- Math Expression
- Function
- Text
- Youtube Video
- Graphing
- Geometry
- Geometry 3D

Step 1 click insert and select Geometry



Step 2 You can see the geogebra Geometry interface added to the screen

Inserting Geogebra geometry 3D

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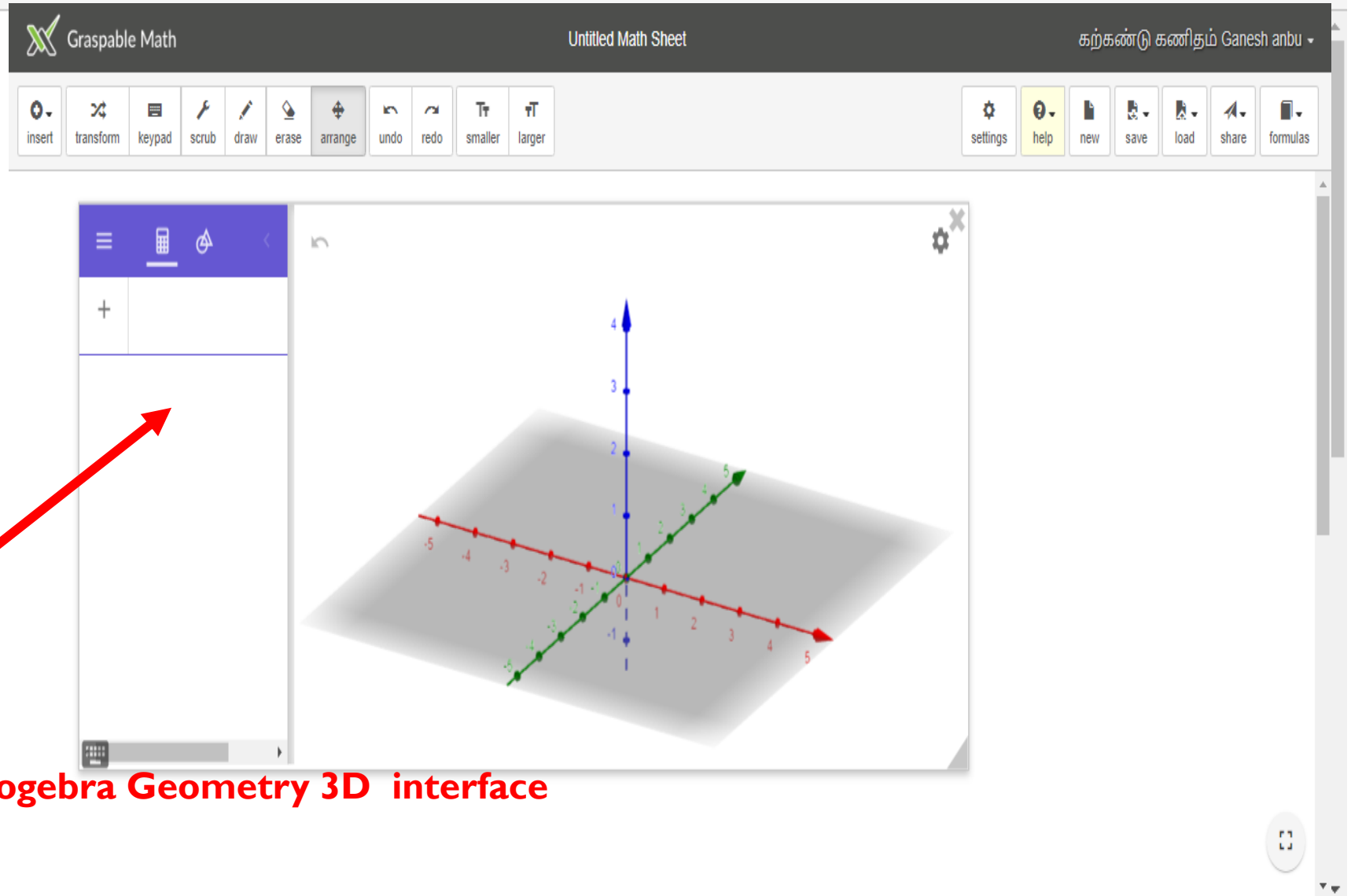
select one:

- Math Expression
- Function
- Text
- Youtube Video
- Graphing
- Geometry
- Geometry 3D

Step 1 click insert and select Geometry 3d



Step 2 You can see the geogebra Geometry 3D interface added to the screen

Graspable Math

Transforming equation to Geogebra graph

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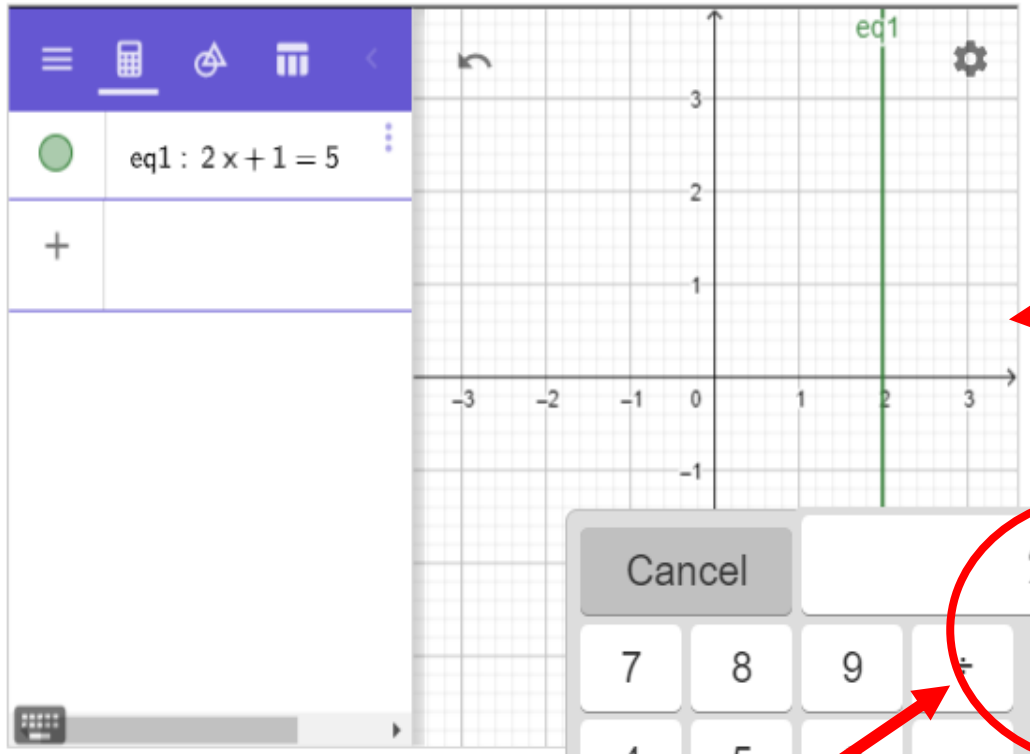
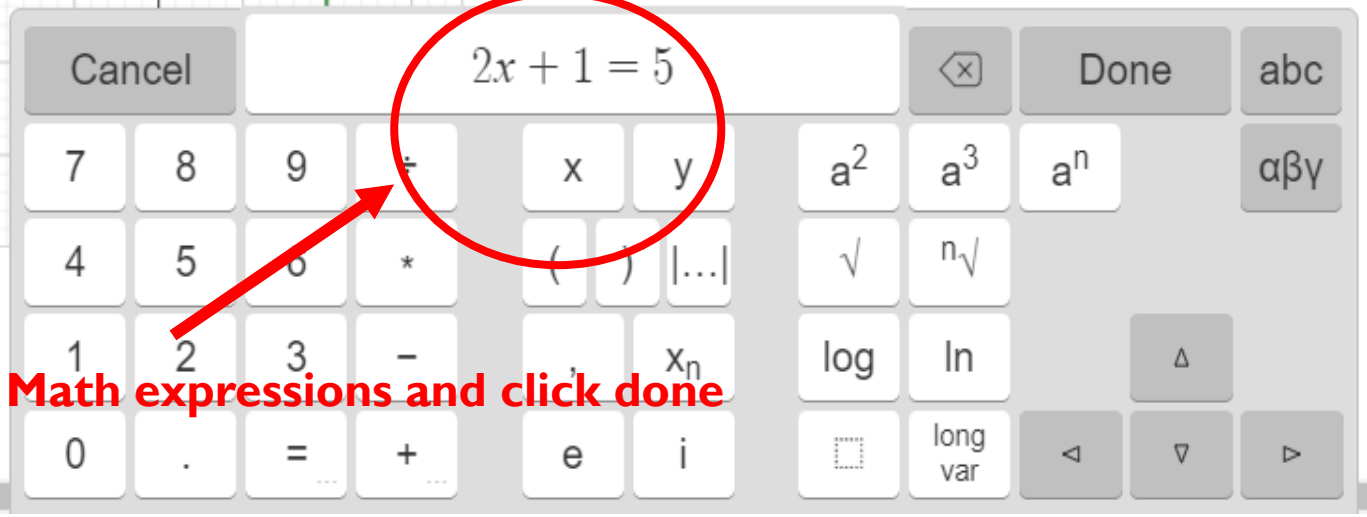
insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas



$2x + 1 = 5$

Step 2: select the round dot and Drag the point to the geogbra graphing interface you can see the line or curve virtually.



Step I type the Math expressions and click done

Graspable Math

Finding and verifying the solution for given equations

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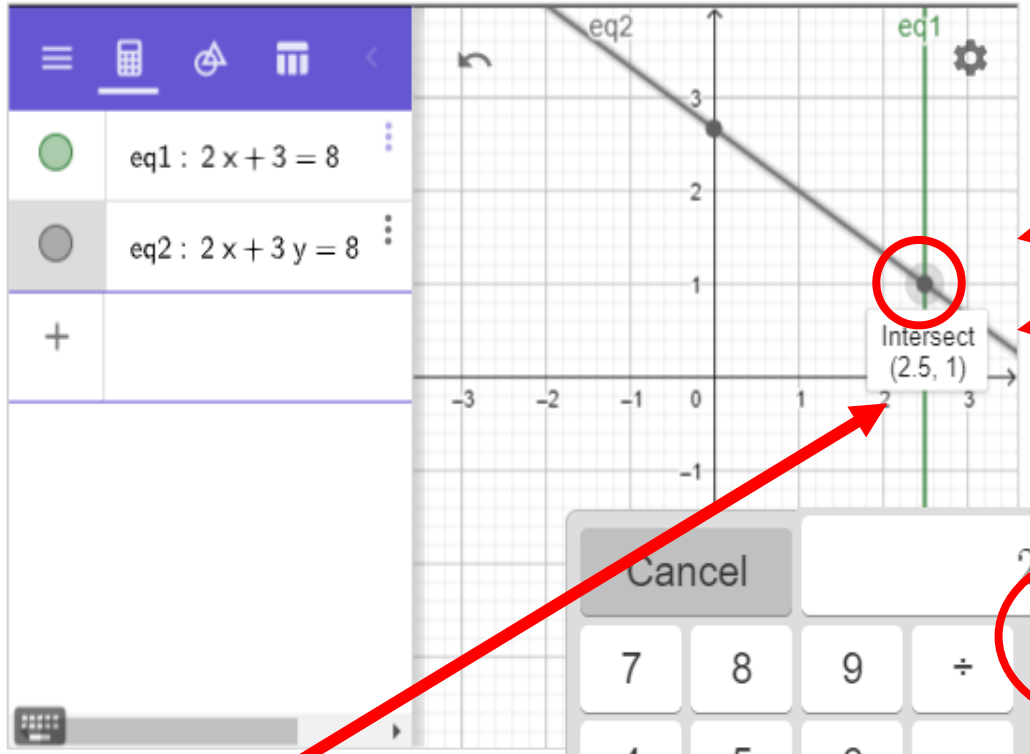
insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas



$2x + 3 = 8$

$2x + 3y = 8$

Step 2: select the round dot and Drag the point to the geogbra graphing interface you can see the line or curve virtualy.

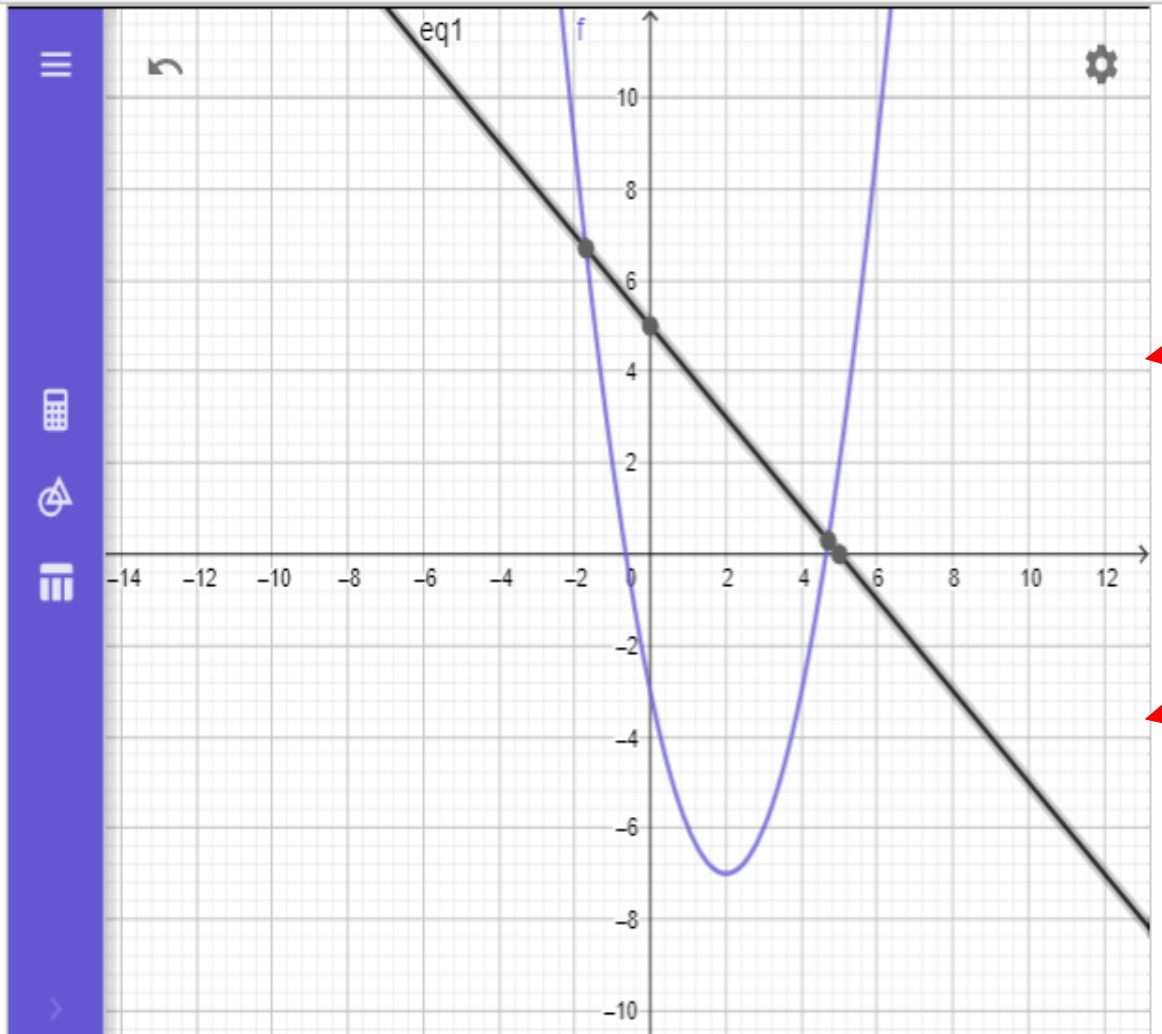
Step 3 click on the lines you can view & verify the solution as the intersect point

Step 1 type the Math expressions and click done

Finding and verifying the solution for given equations

Graspable Math | Untitled Math Sheet | கற்கண்டு கணிதம் Ganesh anbu

insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas



$x + y = 5$

$f(x) = x^2 - 4x - 3$

click on the line or curve you can view & verify the solution as the intersect point

Graspable Math

Transforming equation to Geogebra geometry 2D shape

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insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas

Basic Tools

Move | Point | Segment | Line | Polygon | Circle with Center through

Edit

AA

eq1

$x^2 + y^2 = 5$

Type the equation a geometrical shape and drag the equation into geogebra geometry interface you can see the shape virtually

Cancel | $x^2 + y^2 = 5$ | Done | abc | αβγ

7 8 9 ÷ | x y | a^2 a^3 a^n

4 5 6 * | ( ) |...| | √ $\sqrt[n]{}$

1 2 3 − | , x_n | log ln

0 . = + | e i | long var

in this expression.

v2.22.5

Graspable Math

Transforming equation to Geogebra geometry 3D shape

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insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas

eq1: $(x - 1)^2 + (y - 1)^2 +$

$(x-a)^2+(y-b)^2+(z-c)^2=r^2$

$(x-1)^2+(y-1)^2+(z-1)^2=4$

Correct any mistakes you made in this expression.

Cancel | $(x-1)^2+(y-1)^2+(z-1)^2=$ | Done | abc

7 8 9 ÷ | x y | a^2 a^3 a^n | αβγ

4 5 6 * | ( ) |...| | √ $\sqrt[n]{}$

1 2 3 − | , x_n | log ln | Δ

0 . = + | e i | long var | ◁ ▽ ▷

Type the equation a geometrical 3D shape and drag the equation into geogebra geometry 3D interface you can see the shape virtually

Changing the equations by using scrub option

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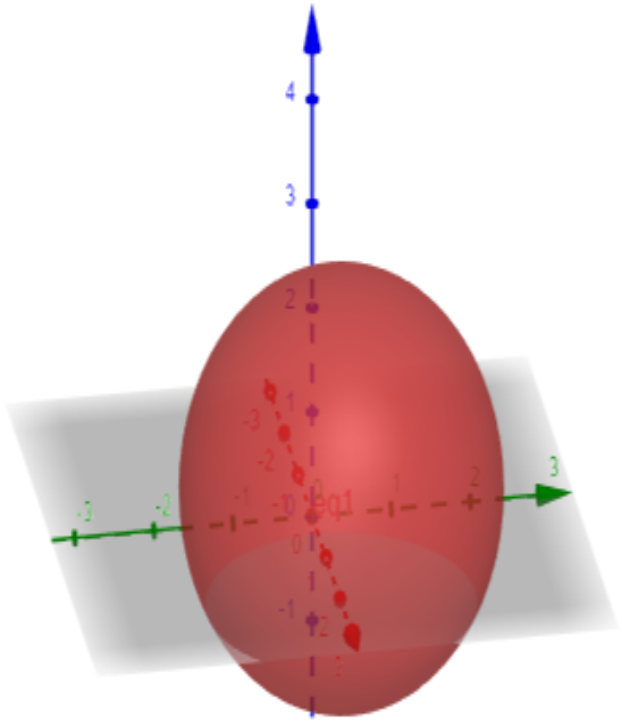
insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas

eq1: $(x - 2.1)^2 + y^2 + (z -$

1. Select scrub option



$$(x-a)^2+(y-b)^2+(z-c)^2=r^2$$

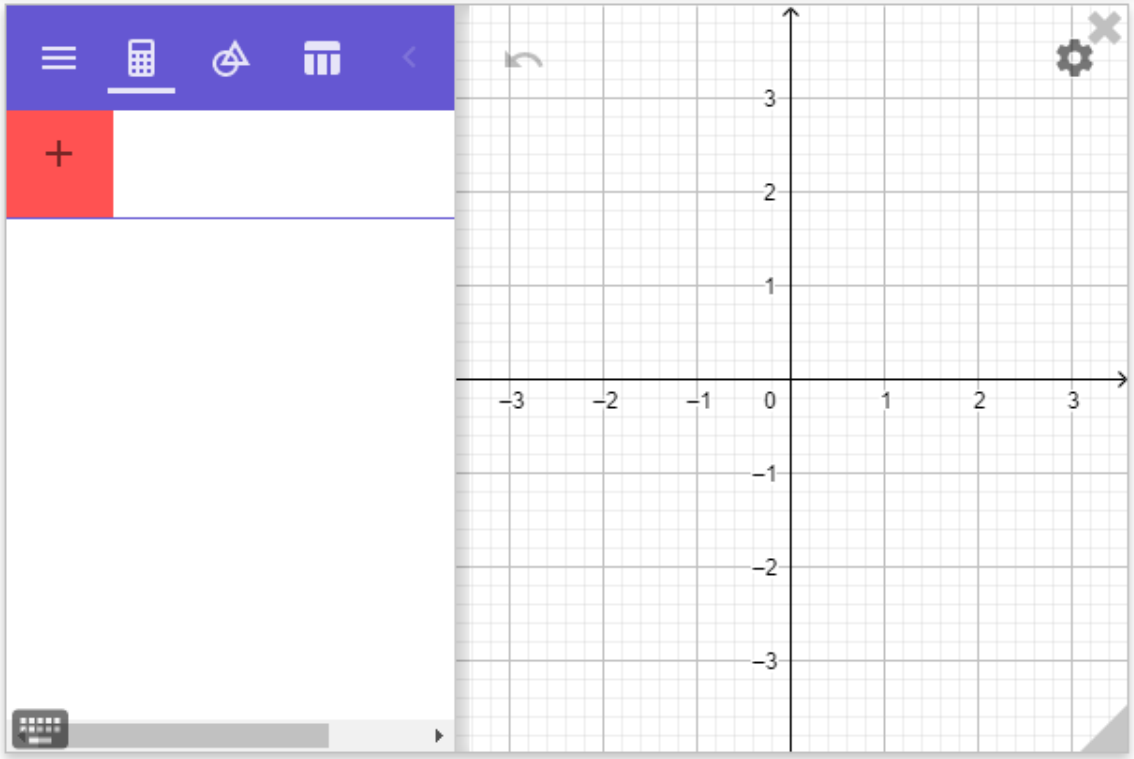
$$(x-2.1)^2+y^2+(z-1.1)^2=4.1$$

2. using mouse you can change the values of the numbers by dragging up and down and shows the students the object moving on x,y&z axis

Create worksheets

insert | transform | keypad | scrub | draw | erase | arrange | smaller | larger | formulas

Solve this system by graphing. Drag each equation to the graph. Pay attention to the slopes and y-intercepts.



$y = 2x + 3$

$y = -2x - 5$

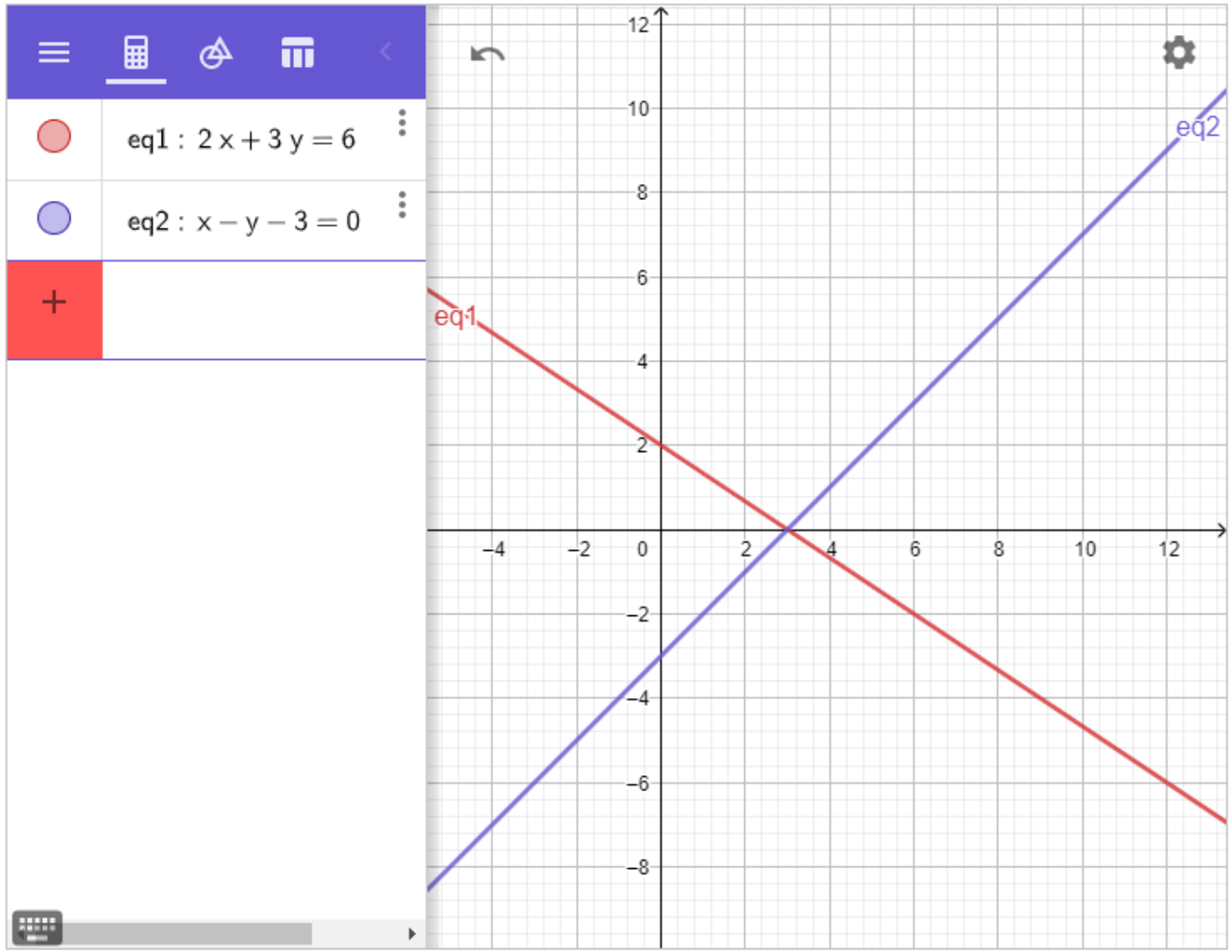
we can create as a worksheet and share with our students

Add more space

insert | transform | keypad | scrub | draw | erase | arrange | smaller | larger

Create worksheets

formulas



1. What is the slope of line 1?

2. What is the y-intercept of line 1?

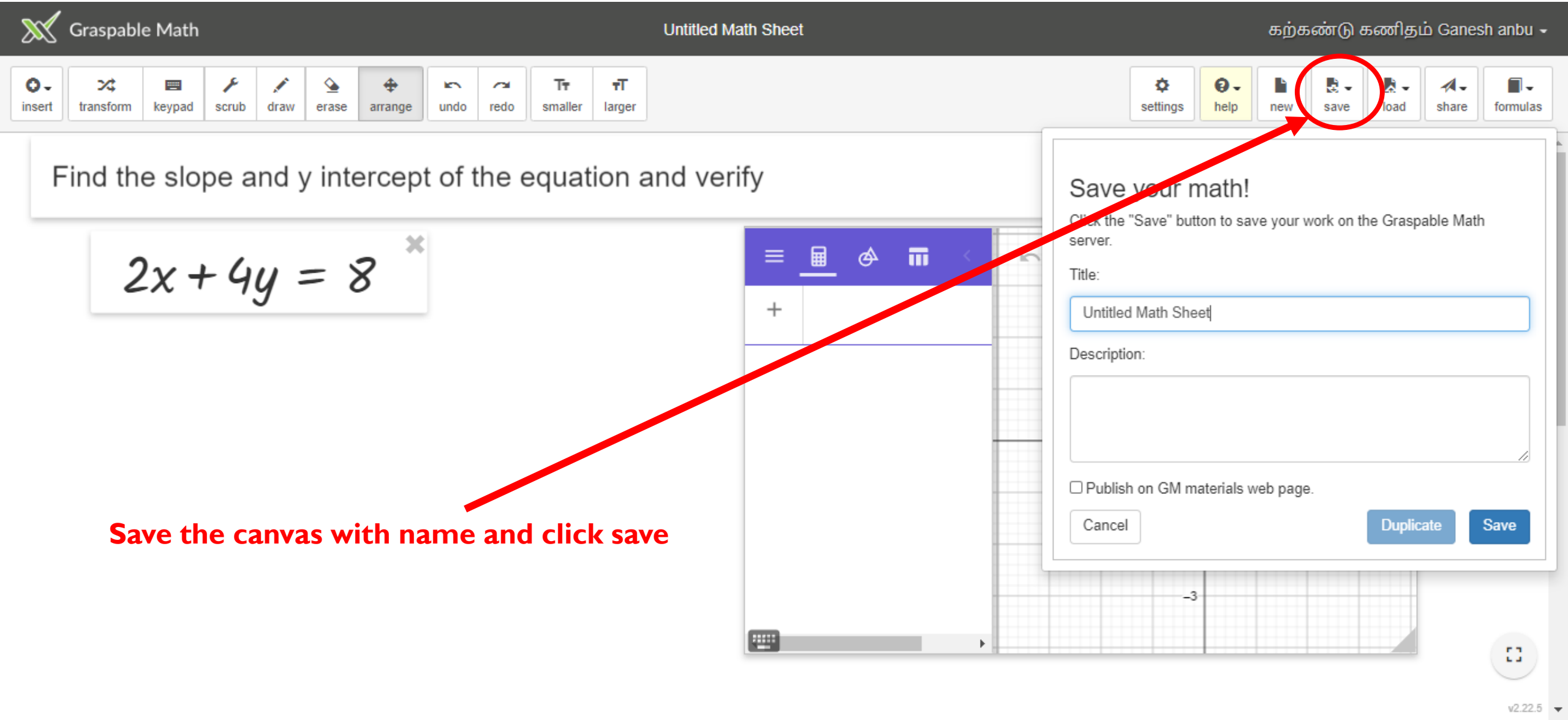
3. What is the slope of line 2?

4. What is the y-intercept of line 2?

5. Find the solution for the eq1 &eq2

Add more space

Saving the file



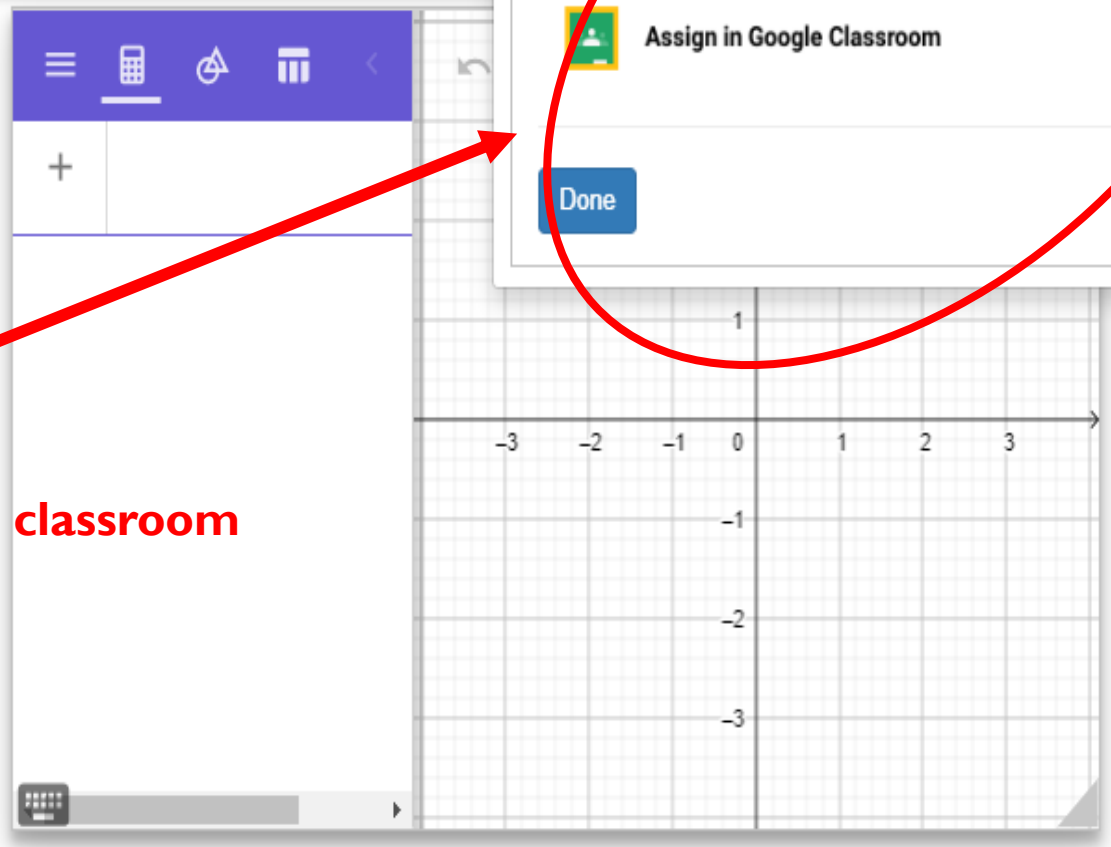
Sharing options

Graspable Math | worksheet 1 | கற்கண்டு கணிதம் Ganesh anbu

insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger | settings | help | new | save | load | share | formulas

Find the slope and y intercept of the equation and verify

$2x + 4y = 8$



Share the worksheet as homework in Google classroom

v2.22.5

Sharing options

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insert | transform | keypad | scrub | draw | erase | arrange | undo | redo | smaller | larger

settings | help | new | save | load | share | formulas

Find the slope and y intercept of the equation and verify

$2x + 4y = 8$

Social | Link | Email | Embed

Here is your link:

https://graspablemath.com/canvas/?load=_0bb02aadeb074a67

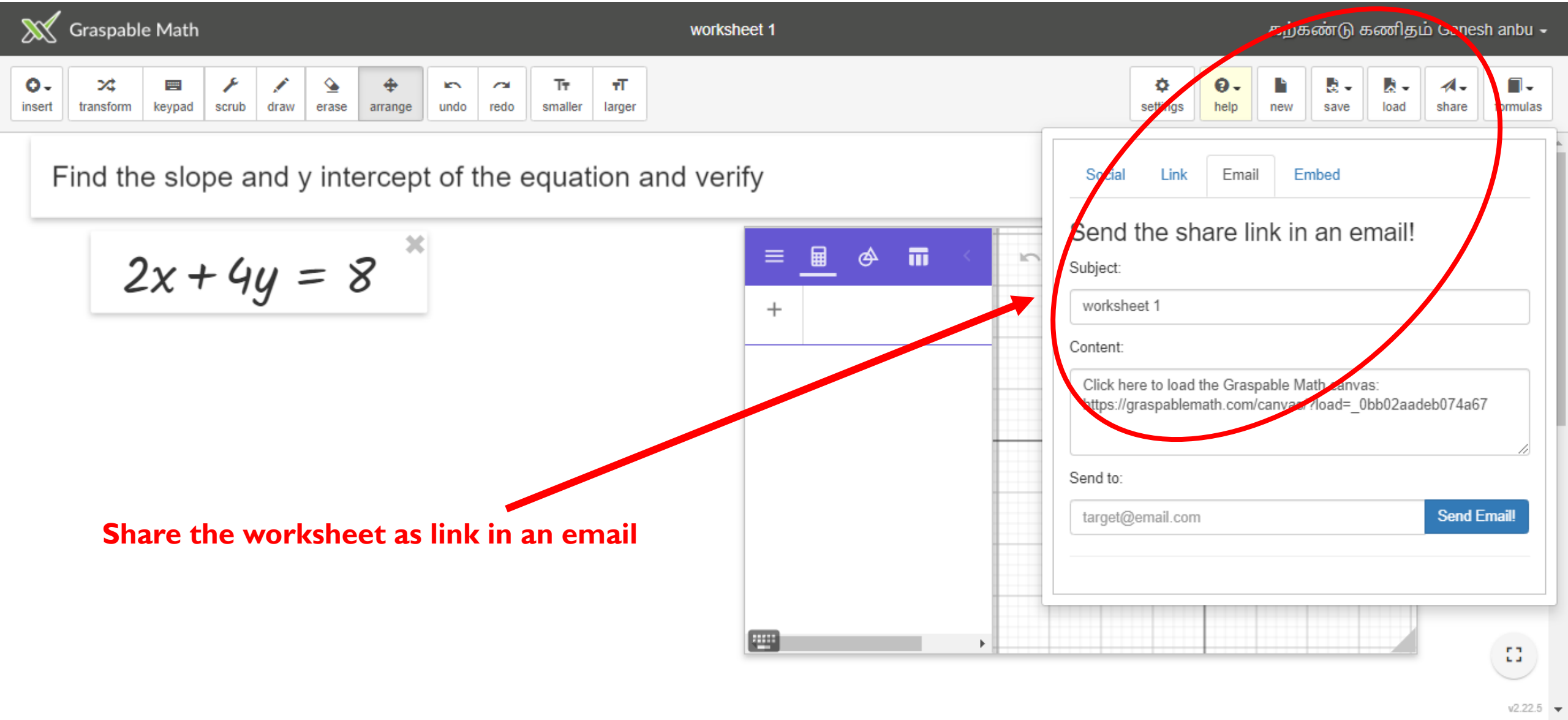
Keep this link for yourself or share it with others. It will always point to the latest version of this canvas.

Done

Share the worksheet as link and share with others

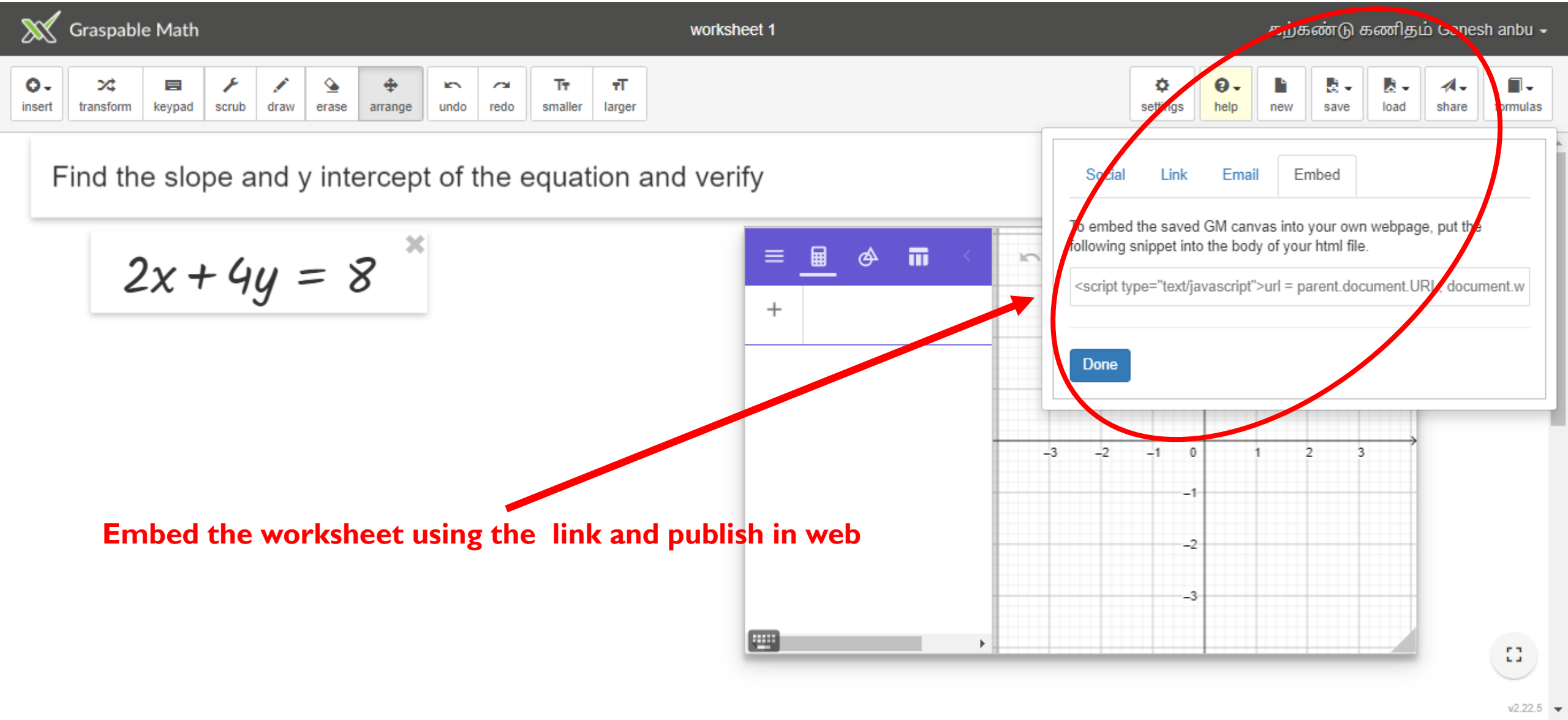
v2.22.5

Sharing options



Share the worksheet as link in an email

Sharing options



Thank you