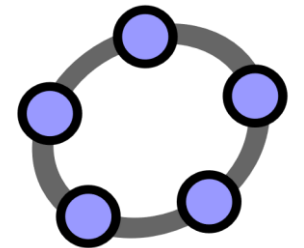
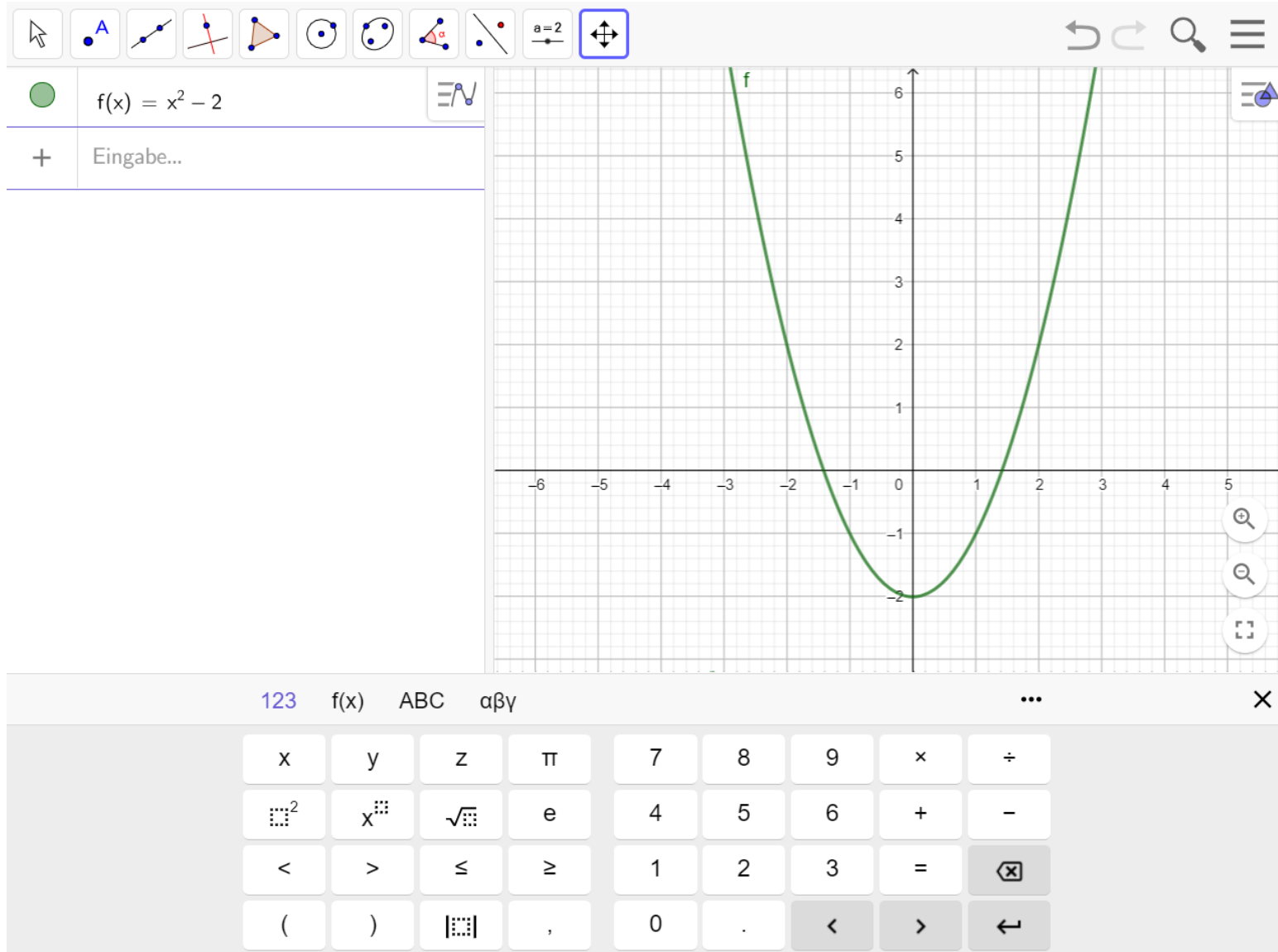


GeoGebra – Apps

Prof. Dr. Markus Hohenwarter
Johannes Kepler University Linz, Austria
www.jku.at/stem
www.geogebra.org



GeoGebra Classic



- Desktop Software
- Started in 2002

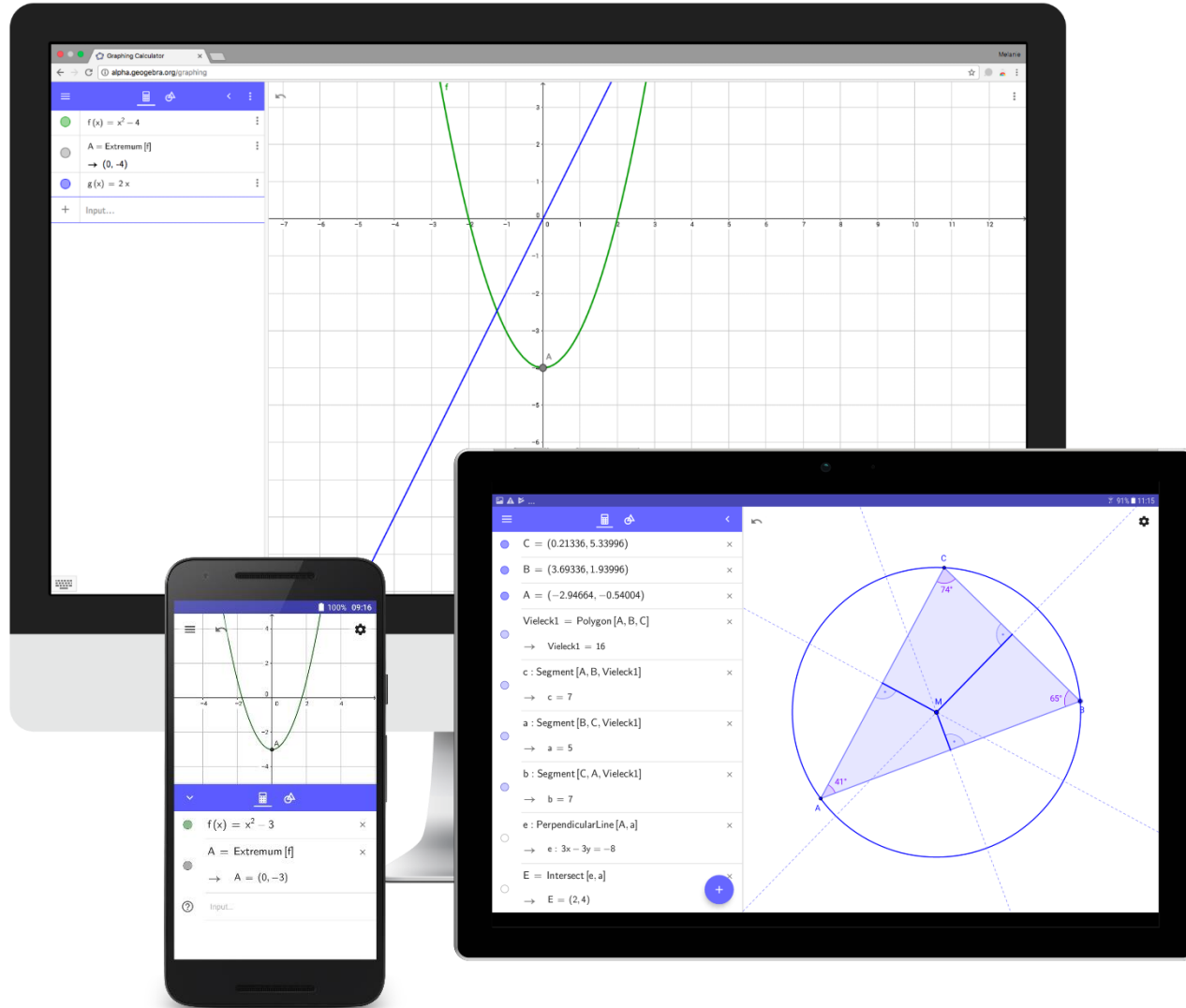
Platforms

- Windows
- Mac
- iPad
- Android Tablets

Research:
How to
make our
apps „easy-
to-use“?



New GeoGebra Apps



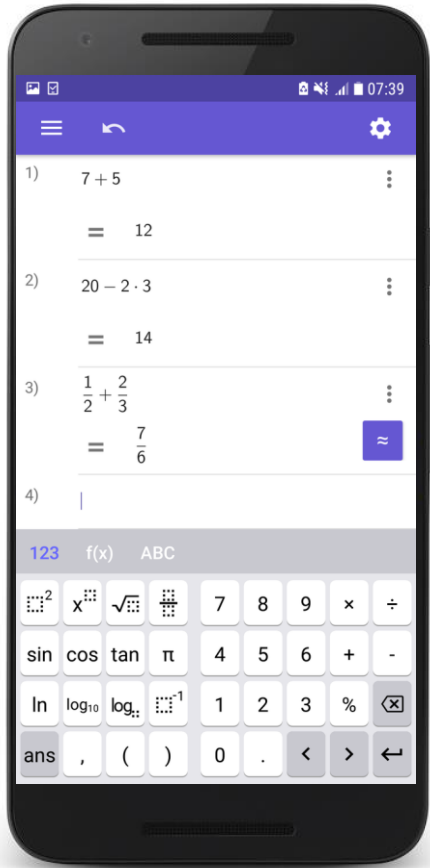
- GeoGebra Graphing Calculator
www.geogebra.org/graphing
- GeoGebra Geometry
www.geogebra.org/geometry
- GeoGebra 3D
www.geogebra.org/3d

For all Plattformen

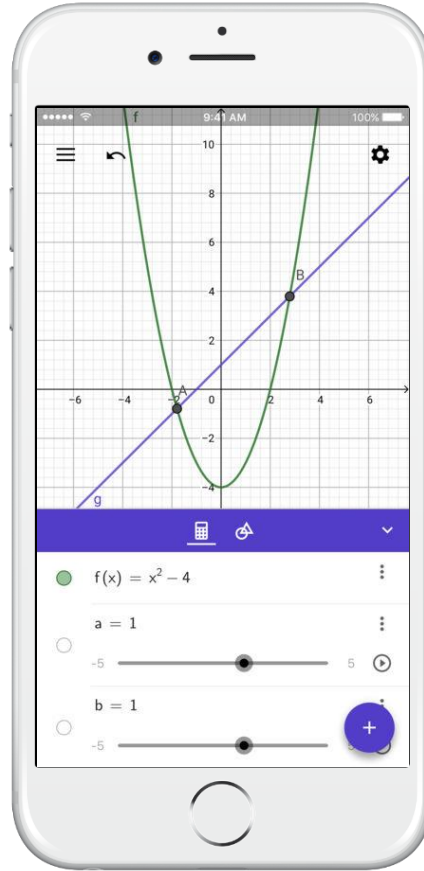
- Web / Chromebooks
- iPhone / iPad
- Android
- Windows
- Mac

www.geogebra.org/download

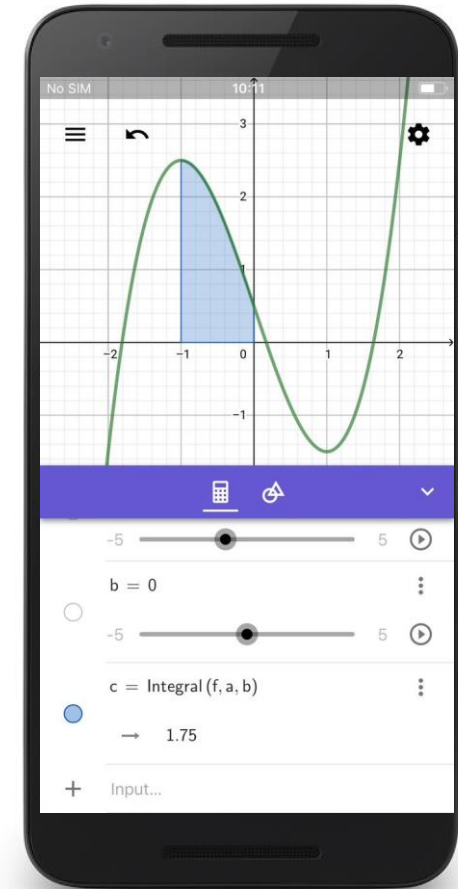
GeoGebra Calculator Apps



Scientific Calculator



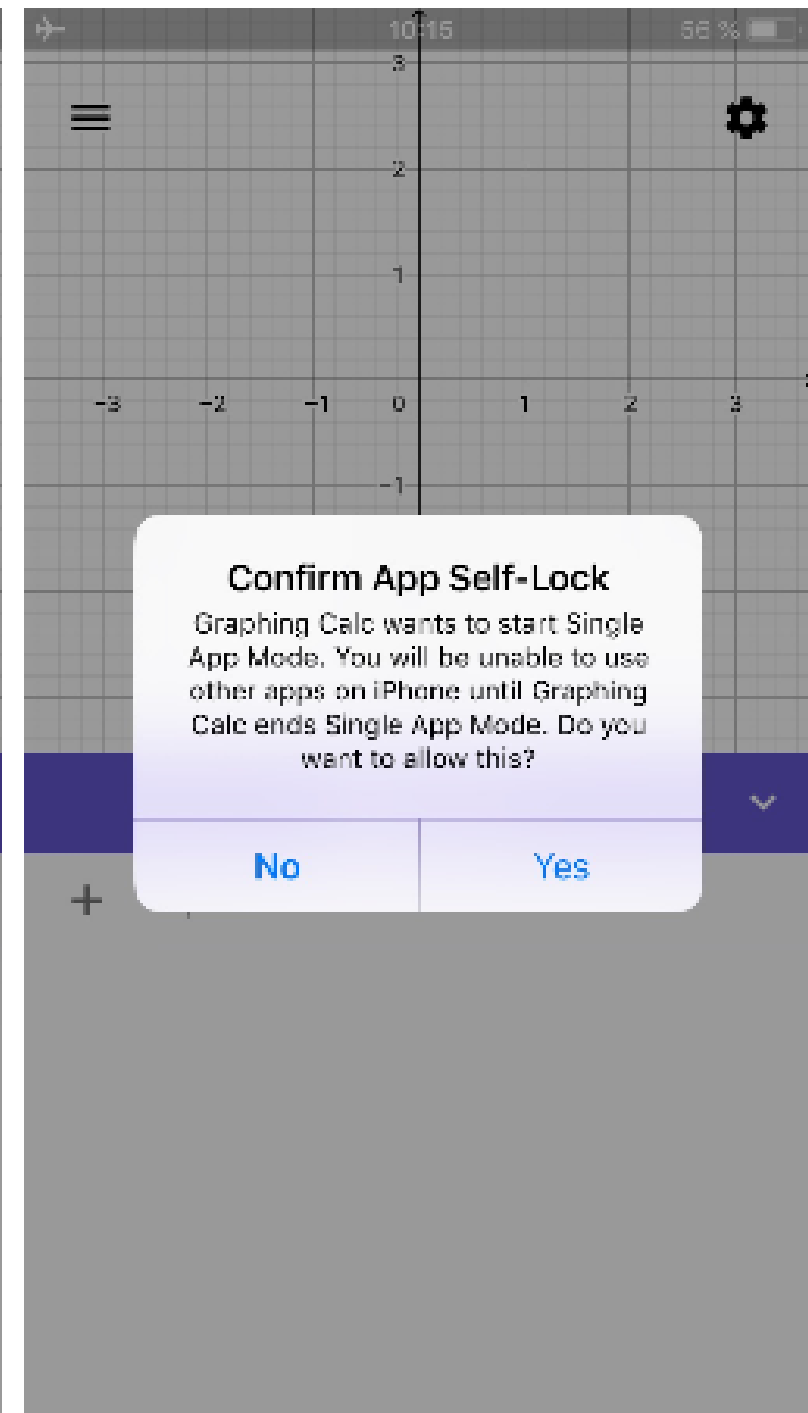
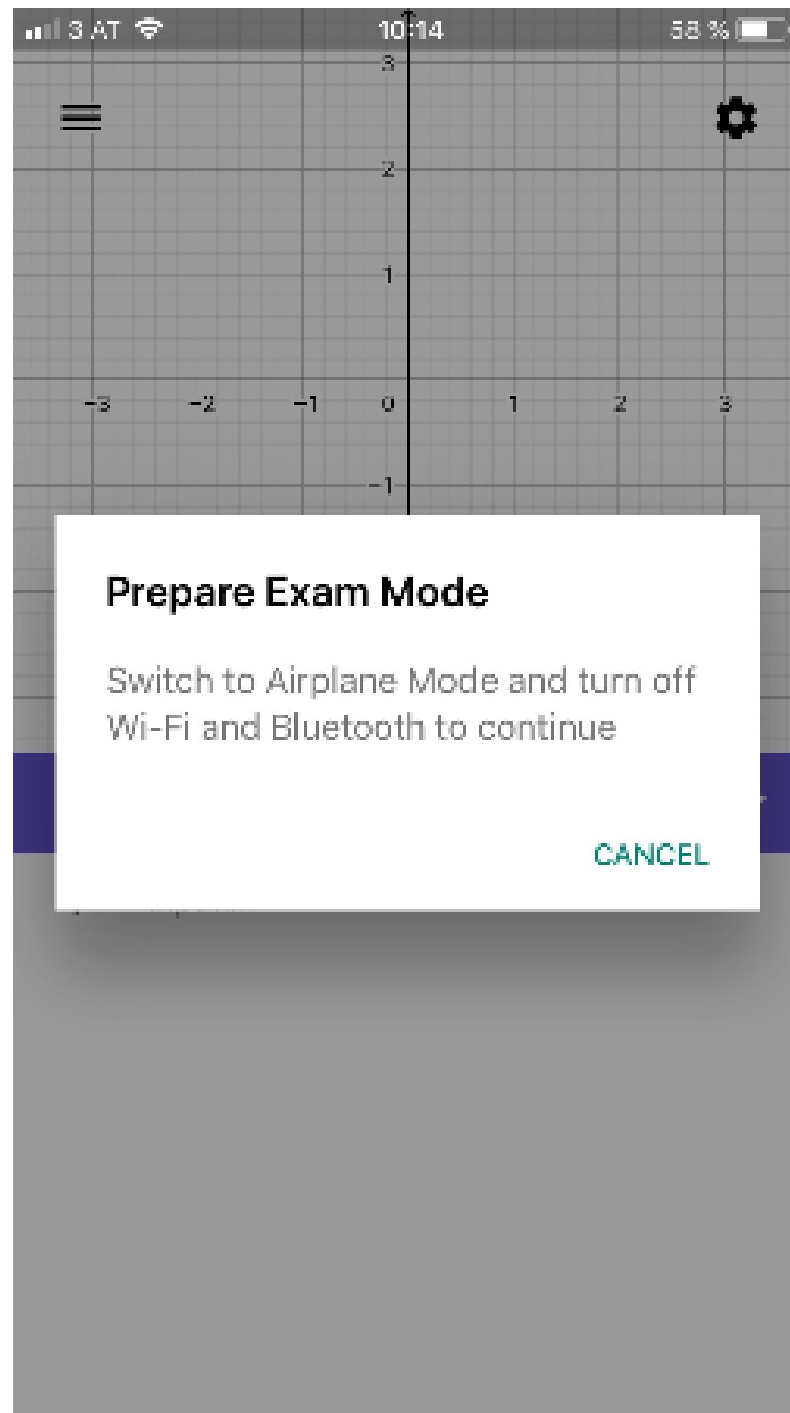
Graphing Calculator



CAS Calculator
(symbolic)

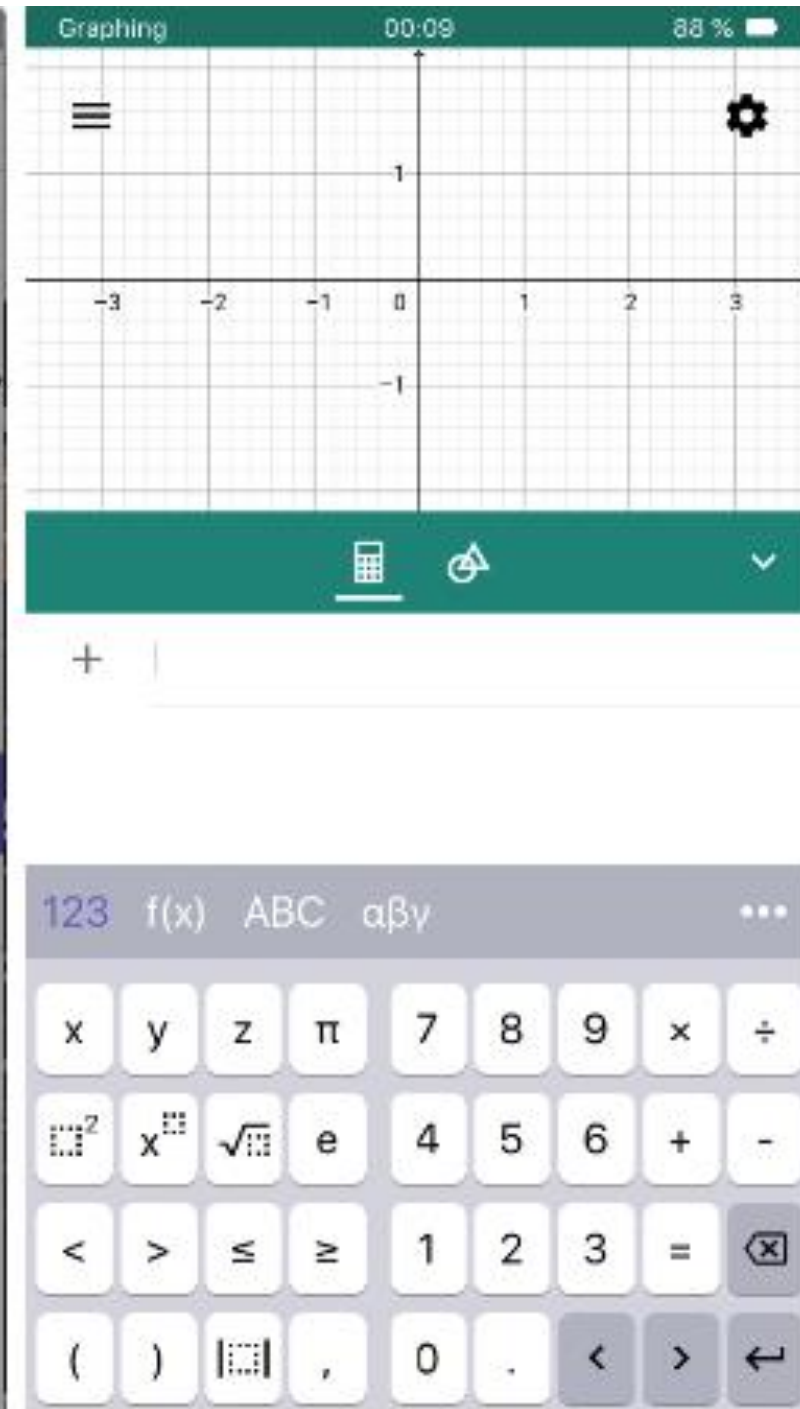
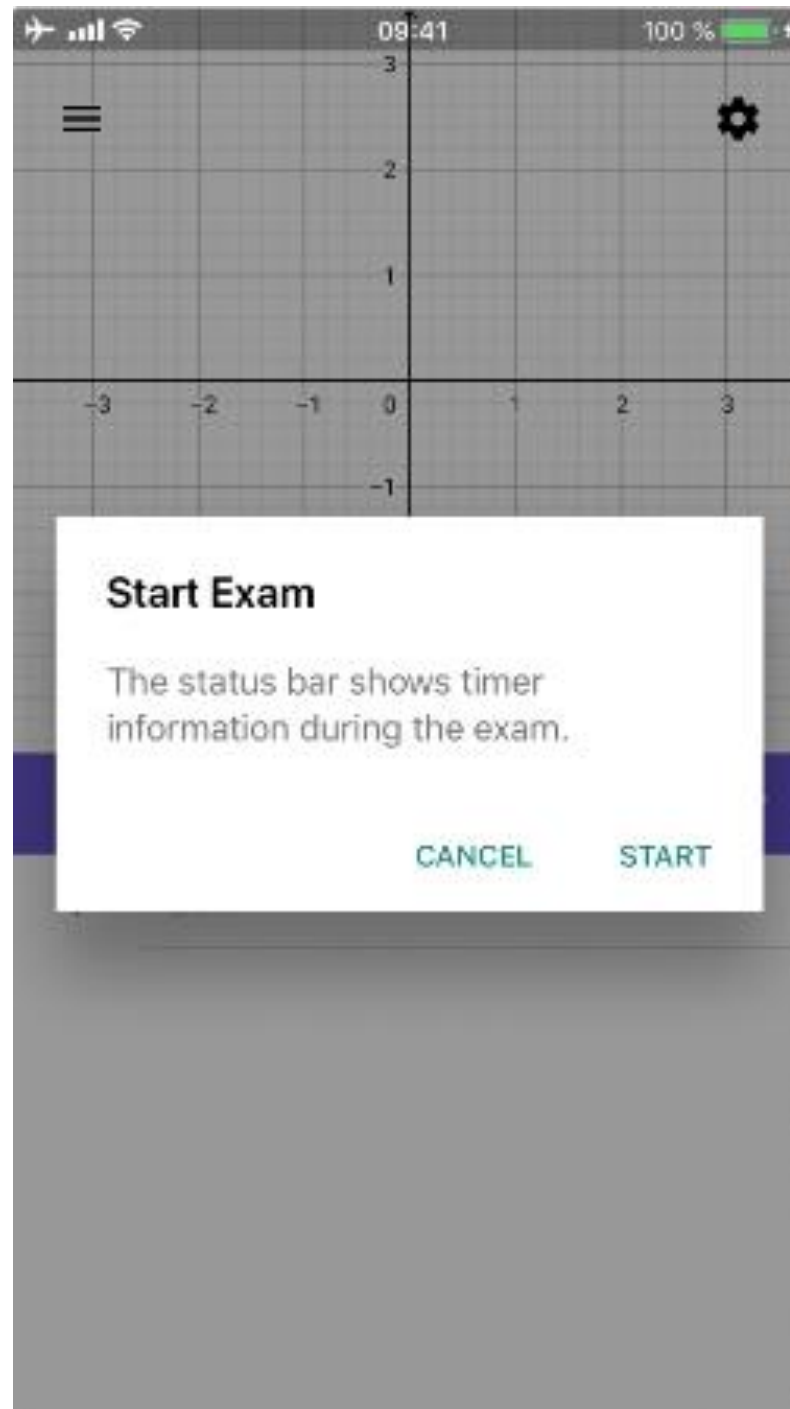
Exam Mode

in Graphing Calculator Apps
for iOS & Android

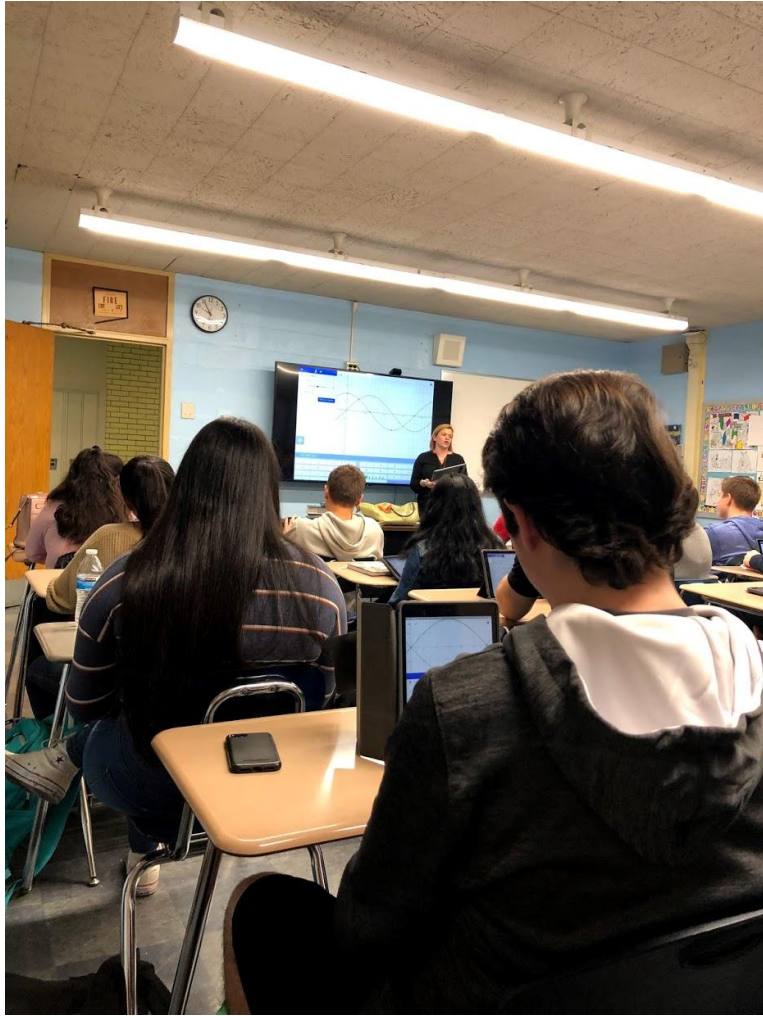


Exam Mode

in Graphing Calculator Apps
for iOS & Android

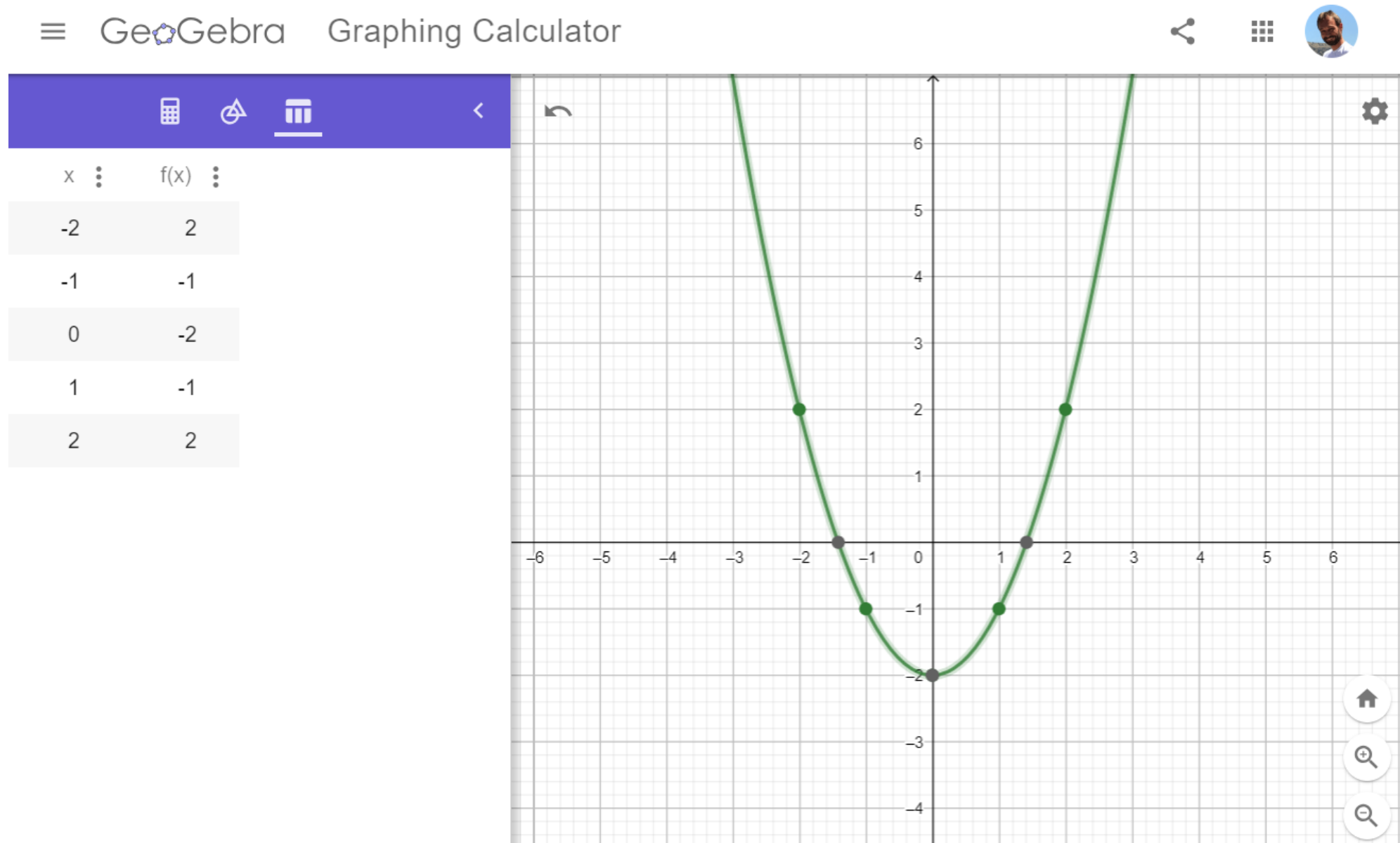


GeoGebra in NY State Exam on iPads



Sewanhaka School District, Long Island, NY – Geometry, Algebra 1 exams on Jan 23 & 24, 2019

Coming soon: Table View



Coming soon: GeoGebra Notes

Notes - GeoGebra x

Markus

Sicher | <https://www.geogebra.org/notes>

Nullstellen einer quadratischen Funktion

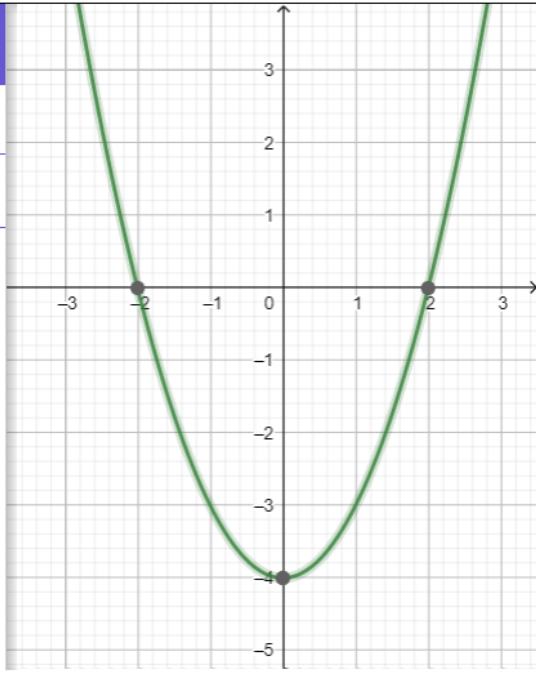
$x^2 - 4$

$x_1 = -2$

$x_2 = 2$

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

Eingabe...



GeoGebra drawing toolbar with icons for selection, line, circle, rectangle, and a color palette.

Next Year: GeoGebra Math Solver

?

c : $x^2 + 8x = 9$

$L_1 = \text{Löse}(c)$

SHOW STEPS

Löse

Complete the square

Add **16** to both sides

$$x^2 + 8x + 16 = 25$$

Rewrite $8x$ as $2x \cdot 4$

$$x^2 + 2x \cdot 4 + 16 = 25$$

$$x^2 + \textcolor{red}{8}x + 16 = 25$$

Rewrite $\textcolor{red}{8}x$ as $2x \cdot \textcolor{red}{4}$

$$x^2 + \textcolor{red}{2}x \cdot \textcolor{red}{4} + 16 = 25$$

Use $a^2 + 2ab + b^2 \equiv (a + b)^2$ to factor

$$(x + 4)^2 = 25$$

$$\textcolor{red}{x}^2 + 2\textcolor{red}{x} \cdot \textcolor{blue}{4} + \textcolor{blue}{16} = 25$$

Use $a^2 + 2ab + b^2 \equiv (a + b)^2$ to factor

$$(\textcolor{red}{x} + \textcolor{blue}{4})^2 = 25$$

Take square root of both sides

$$x + 4 = \pm\sqrt{25}$$

Rewrite 25 as 5^2

$$x + 4 = \pm\sqrt{5^2}$$

$$x + 4 = \pm\sqrt{\textcolor{red}{25}}$$

Rewrite $\textcolor{red}{25}$ as 5^2

$$x + 4 = \pm\sqrt{\textcolor{red}{5}^2}$$

Reduce the root and power by : 2

$$x + 4 = \pm 5$$

$$x + 4 = \pm\sqrt{\textcolor{red}{5}^2}$$

Reduce the root and power by : $\textcolor{red}{2}$

$$x + 4 = \pm\textcolor{red}{5}$$

Löse

Solution : 1

Löse

Solution : -9

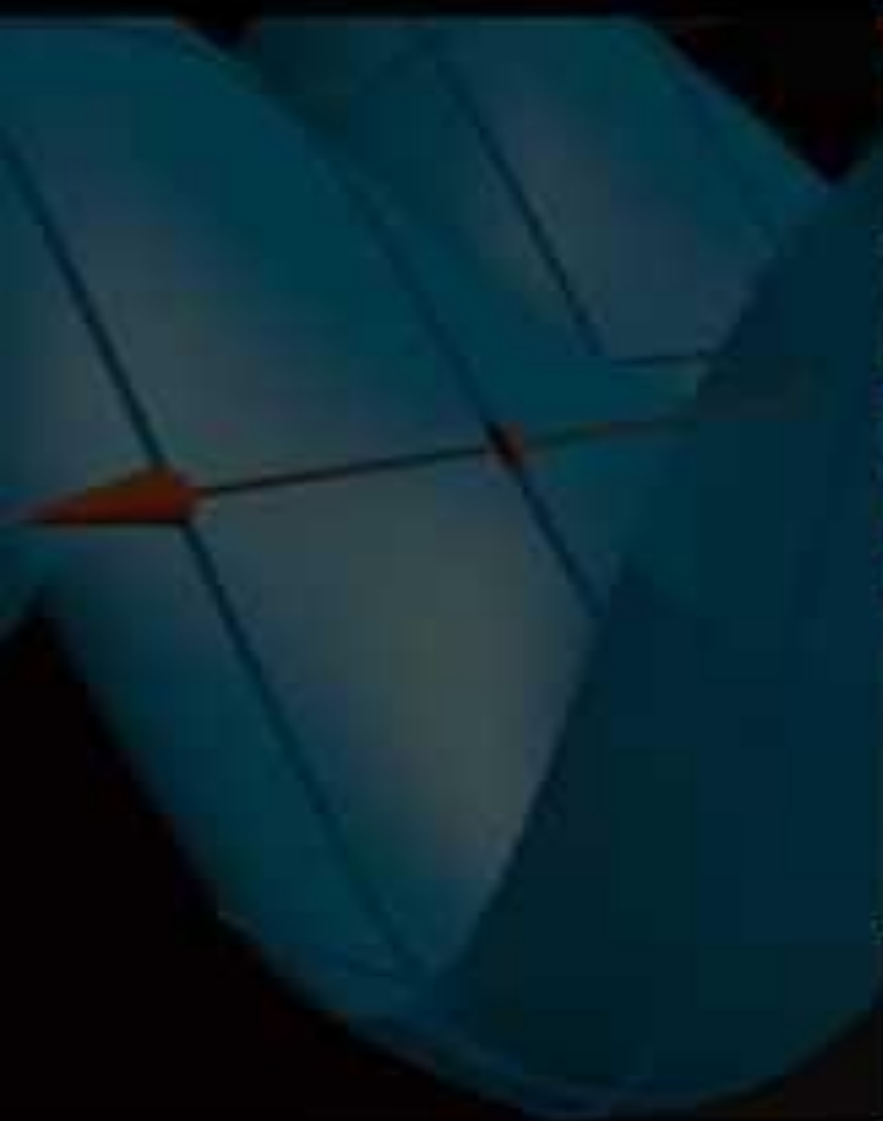
Solutions : 1, -9

Because it's cool: 3D Printing



Even cooler: GeoGebra Augmented Reality







● $z = 5 - \sqrt{20x^2 + 20y^2}, 1 < x^2 + y^2 < 8$

● $z = -4.5, \frac{(x-5)^2}{4} + \frac{y^2}{1.5} < 1$



● LENGTH = 8

● WIDTH = 7

● HEIGHT = 4

● A = (8, 0, 0)

● B = (0, 7, 0)

● C = (0, 0, 4)

SCREENCASTOMATIC $(0) + \lambda (1, 0, 0)$

Thank You!
support@geogebra.org

