IB GDC Skills

AddvanceMaths.com/IBSLAI

Graphing Calculator Practice

Casio CG50 Guide: www.addvancemaths.com/cg50/

All skills needed for these practice questions are explained in the videos embedded in the webpage linked via the QR code.

Skill A: Solve-N

Solve-N Video Direct Link

1. Solve the following questions using Solve-N on the CG50.

$x + 3 = 8$ $\quad x = 5$

$3y = 600$ $\quad y = 200$

$\frac{b}{5} = 2$ $\quad b = 10$

You'll need to check that your GDC settings are in Degrees.

$t^2 = 25$

$t = 5$
$t = -5$

$\sin(\theta) = 0.5$

$0° \leq \theta < 180°$

$\theta = 30$
$\theta = 150$

$\frac{3p + 40}{10} = p - 3$ $\quad p = 10$

(9 marks)

Tip: Some equations have multiple solutions.

Solve-N will show multiple solutions.

$\sin(\theta) = 0.5$ has an infinite number of solutions, so you should choose the one's that obey the inequality in the question.

2. Read the sentences below, form an algebraic equation from the information give and use Solve-N to solve the equation.

a) The sale price of a TV is 20% less than the original. The reduced TV costs $368.

Let x be the original price of the TV. Find x.

SolveN ($x \times 0.8 = 368$)

$x = \$460$

b) Jim thinks of a number, and calls it n. He doubles it, adds 5 and then divides this by 3. His new number is 15.

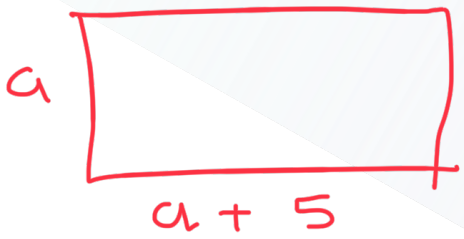
Find n.

$\frac{2n+5}{3} = 15$

$n = 20$

c) A rectangle's height is a. The width is 5 metres longer than the height. The area of the rectangle is $104m^2$.

Find the value of a.



SolveN($x(x+5) = 104$)

$x = 8$, $x = -13$

$a = 8$

(6 marks)

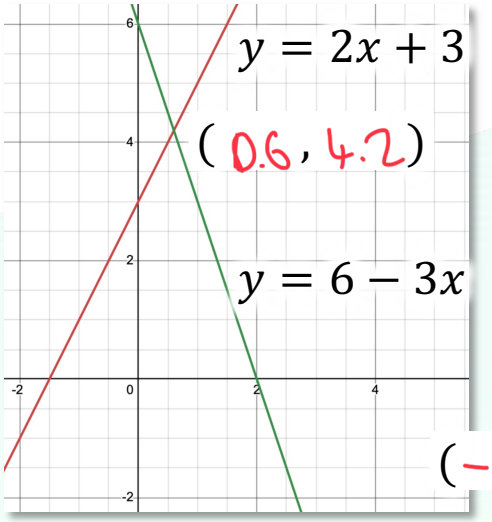
Skill B: Solving Simultaneous Equations Using G-Solve.

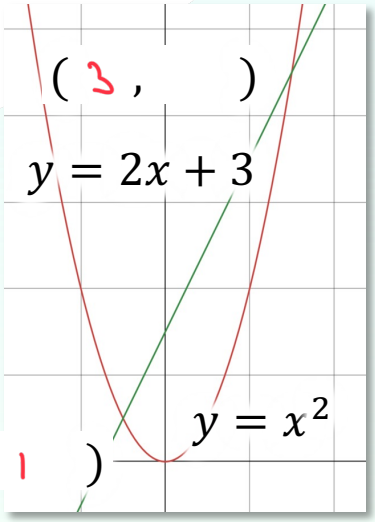
3. Below are some screenshots from www.desmos.com 🔥
(the second coolest website for IB Maths)

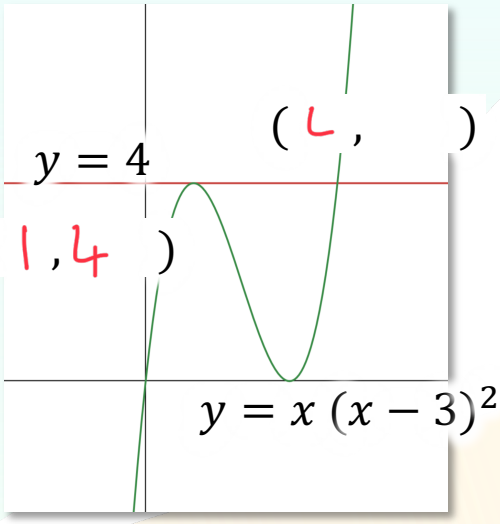
G-Solve Video Link

The screenshots show pairs of equations. Use your GDC to find the exact coordinates where the two lines intersect.

(6 marks)







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4. Curve A has the equation: $f(x) = x\ sin(x)$
Curve B has the equation $g(x) = x(x+1)(x-4)$
Find all the points of intersection of these two graphs.

Give your coordinates to *3 significant figures*.

Degrees
(−0.996, 0.0173)
(0, 0)
(4.01, 0.281)

Radians
(−0.846, 0.632)
(0, 0)
(3.86, −2.56)

(2 marks)

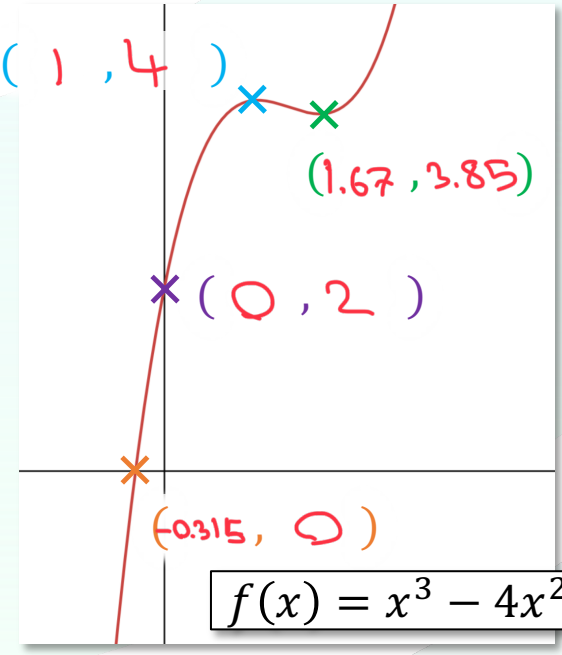
Extension: Redo questions 3 and 4 using Solve-N instead.

As above.

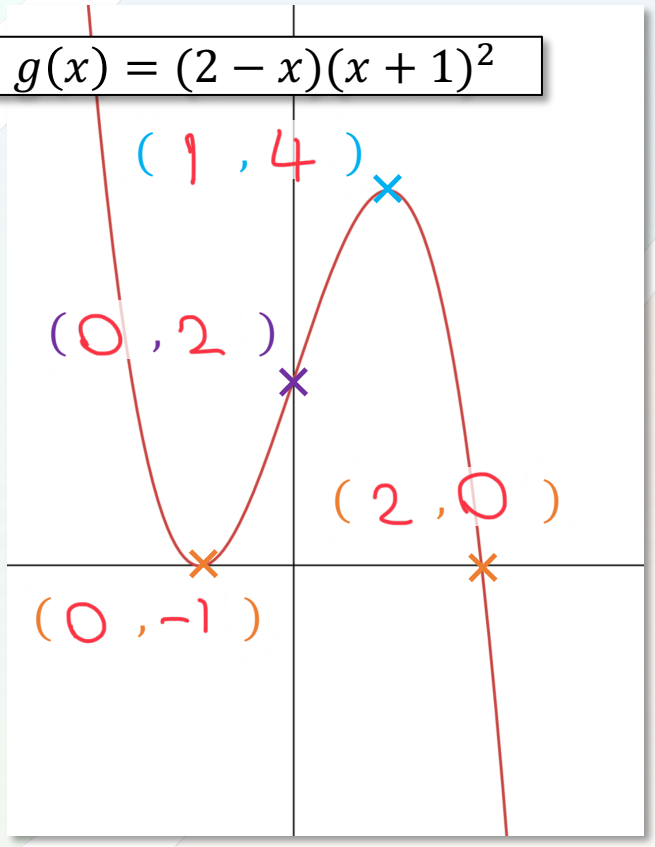
Skill C: Analyse graphs using G-Solve

5. Label the coordinates of the maximum, minimum, roots and y −intercept of the following graphs using G-Solve.

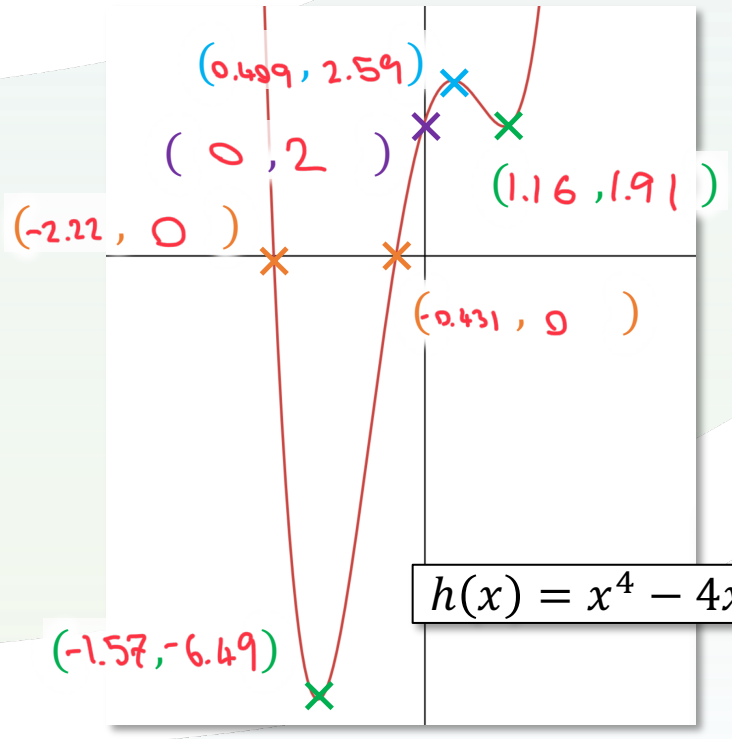
Graph Analysis Using G-Solve



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



$g(x) = (2 - x)(x + 1)^2$



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

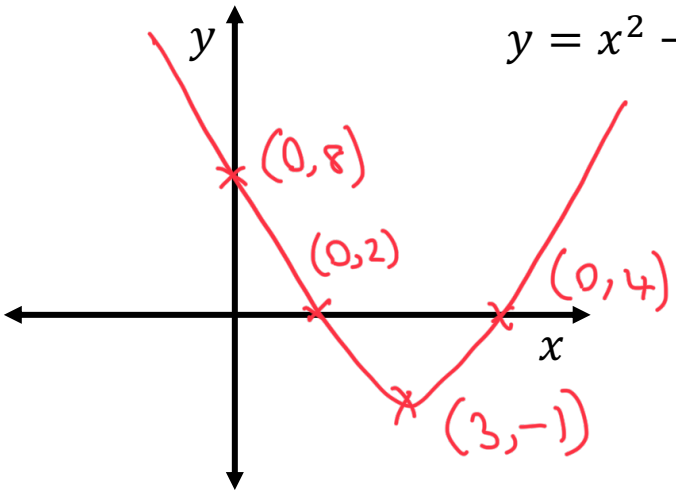
Explore all these graphs on Desmos 👆

(14 marks)

Skill D: **Sketching Graphs with the aid of a GDC.**

6. Sketch the following functions on the axes below, labelling the key features: maximum, minimum, roots and y −intercept.

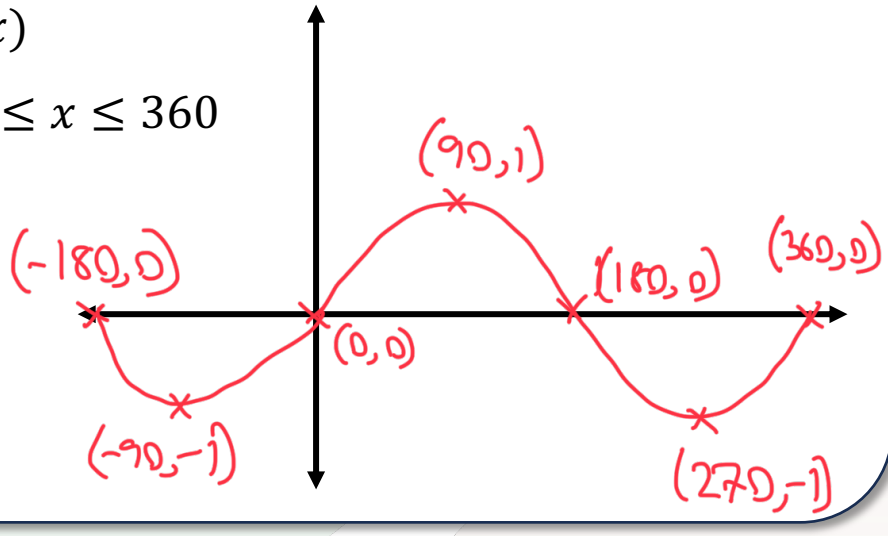
$y = x^2 - 6x + 8$



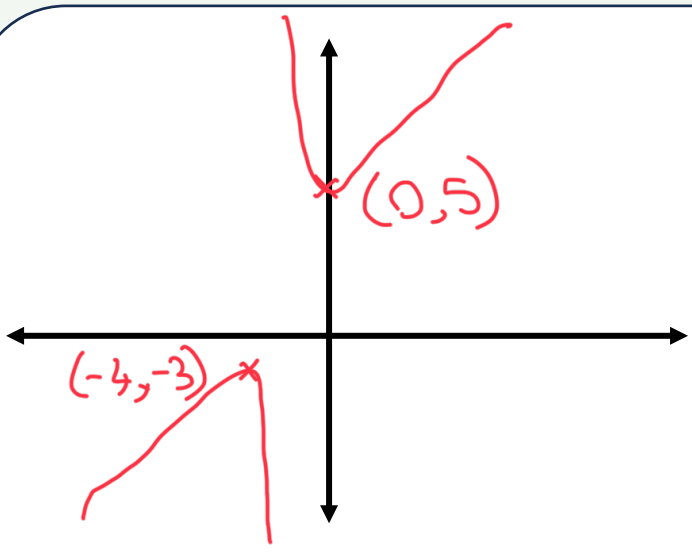
Graph Analysis Using G-Solve

$y = \sin(x)$

For $-180 \leq x \leq 360$



$y = \dfrac{x^2}{x+2} + 5$



(4)

Skill E: Statistics from a list or table.

7. Complete the table for each list of data.

Use your GDC to find the mean, median, mode and interquartile range of each data set.

Statistics from a Table and List

List	Mean	Median	Mode	Range	Interquartile Range
12, 15, 18, 18, 20	16.6	18	18	8	5.5
113, 204, 511, 43	217.75	158.5	\	468	279.5
-2, 1.3, 3, -9, 10					

(15 marks)

8. Find the mean, median, mode and interquartile range of the data in this frequency table.

Weight, kg	Frequency
$3 \leq x < 4$	2
$4 \leq x < 6$	5
$6 \leq x < 10$	3
$10 \leq x < 15$	1

Mean: 6.23

Mode: $4 \leq x < 6$

Median: 5

Interquartile Range: 3

(4 marks)

Graphing Calculator Practice

My calculator is always so reliable.
I can count on it.

Function Buttons

The buttons are used to click the menus displayed at the bottom of the screen.

Shift

Click this first, then another button to get the yellow text option above it.

Alpha

Works like shift, but for the purple text.

Menu

Enters the main menu to switch between the calculator, graphing functions, statistics or other apps.

S - D

Convert between fractions and decimals.

On Button

Helpful if you'd like to use the calculator.

EXE

This is short for 'Execute', because the word 'Equals' was too simple for Casio.

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ANALYSIS and APPROACHES

APPLICATIONS and INTERPRETATIONS