



Core Mathematics C34(GCE)

Practice Question 15

Standard A[★]

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**CRITICAL THINKING IS THE KEY TO SOLVE REAL WORLD PROBLEMS.
CHILDREN MUST BE TAUGHT HOW TO THINK, NOT WHAT TO THINK.
A GREAT TEACHER WILL BE CREATING STUDENTS TO DO NEW THINGS
THROUGH CRITICAL THINKING, NOT SIMPLY REPEATING WHAT OTHER
GENERATIONS HAVE DONE BEFORE. WE DO NOT NEED ANOTHER
ALBERT EINSTEIN OR ISAAC NEWTON.... WE NEED A PERSON BETTER
THAN THEM.**

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Graphs

Question:

On separate diagrams, sketch the graph with equation

(a) $y = \ln(1 + |x|)$ (3 marks)

(b) $y = \ln(1 - |x|)$ (3 marks)

(c) $y = \ln(-1 + |x|)$ (3 marks)

(d) $y = \ln(-1 - |x|)$ (1 mark)

Show on each sketch the coordinates of each point at which the graph crosses or meets the axes.

Golden Rules

To sketch the graph of $y = |f(x)|$

- Sketch the graph of $y = f(x)$.
- Reflect in the x -axis any parts where $f(x) < 0$ (parts below the x -axis).
- Delete the parts below the x -axis.

To sketch the graph of $y = f(|x|)$

- Sketch the graph of $y = f(x)$ for $x \geq 0$
- Reflect this in the y -axis

Traditional or Online classes

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