

A37...Drawing Cubic Graphs

OCR

A37

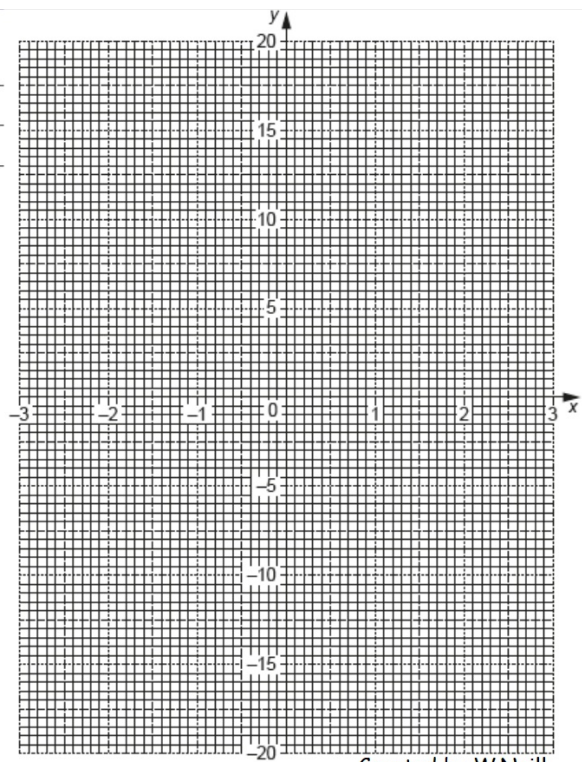
9 (a) Complete the table for $y = x^3 - 3x$

x	-3	-2	-1	0	1	2	3
y	-18	-2		0	-2	2	18

(b) Draw the graph of $y = x^3 - 3x$ for $-3 \leq x \leq 3$.

(c) Use your graph to solve $x^3 - 3x = 10$.

(c) $x = \dots\dots\dots$ [1]



Created by W Neill

A37

9 (a) Complete the table for $y = x^3 - 3x$

x	-3	-2	-1	0	1	2	3
y	-18	-2	2	0	-2	2	18

(b) Draw the graph of $y = x^3 - 3x$ for $-3 \leq x \leq 3$.

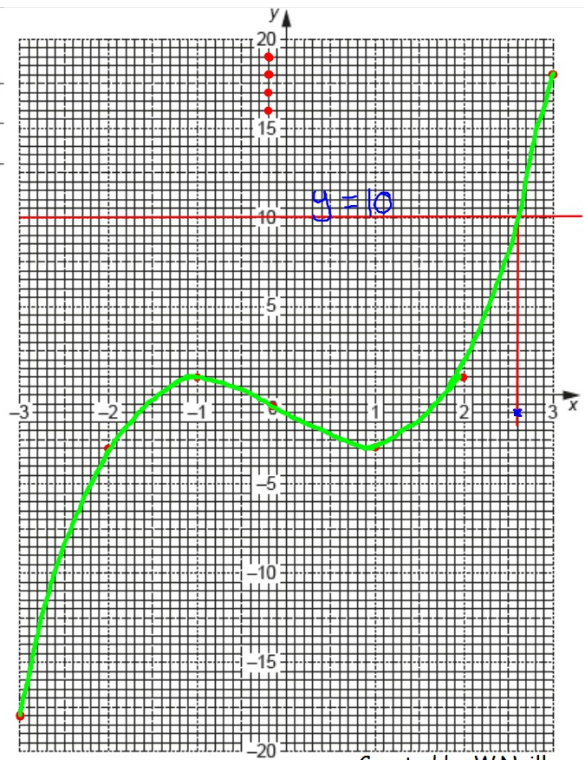
$$(-1)^3 - 3(-1) = -1 - (-3) = -1 + 3 = 2$$

(c) Use your graph to solve $x^3 - 3x = 10$.

$$y = x^3 - 3x \quad y = 10$$

(c) $x = \dots\dots\dots 2.6$ [1]

2.5 — 2.7 ✓

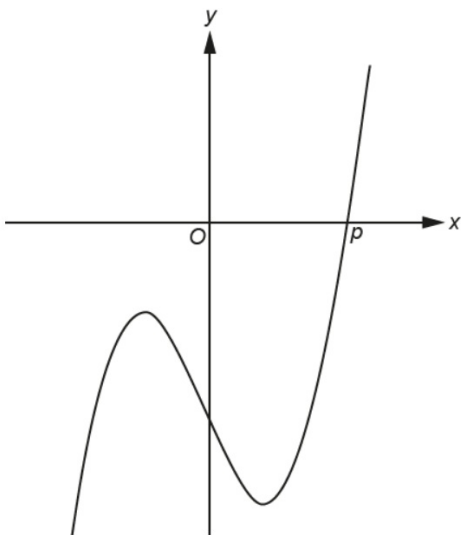


Created by W Neill

9 The graph of $y = x^3 - 7x - 12$ is shown below.
The root of the equation $x^3 - 7x - 12 = 0$ is p .

(a) Calculate y when $x = 3$.

Created by W Neill



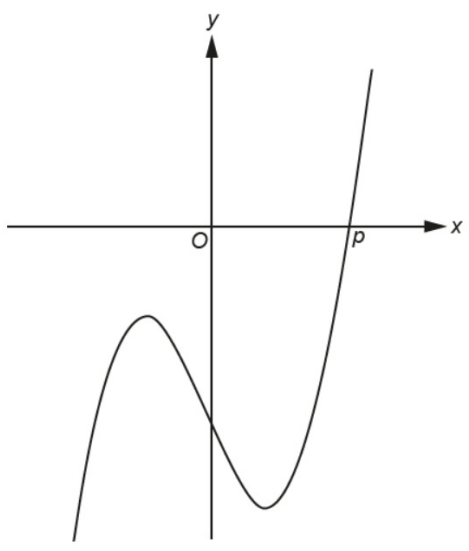
(b) Show that $3 < p < 4$.

(c) Find a smaller interval that contains the value of p .
You must show calculations to support your answer.

(c) $< p <$ [3]

9 The graph of $y = x^3 - 7x - 12$ is shown below.
 The root of the equation $x^3 - 7x - 12 = 0$ is p .

A37



Created by W Neill

(a) Calculate y when $x = 3$.

$$y = 3^3 - 7(3) - 12$$

$$y = 27 - 21 - 12 \dots y = -6$$

(b) Show that $3 < p < 4$.

$x = 3 \dots -6$
 $x = 4 \dots 4^3 - 7(4) - 12$
 $\dots 64 - 28 - 12 \dots y = 24$

as one is a neg and one is +
 $\therefore 3 < p < 4$

(c) Find a smaller interval that contains the value of p .
 You must show calculations to support your answer.

$$x = 3.1 \dots (3.1)^3 - 7(3.1) - 12 \dots -3.909$$

$$x = 3.9 \dots (3.9)^3 - 7(3.9) - 12 \dots 20.019$$

(c) $3.1 < p < 3.9$ [3]

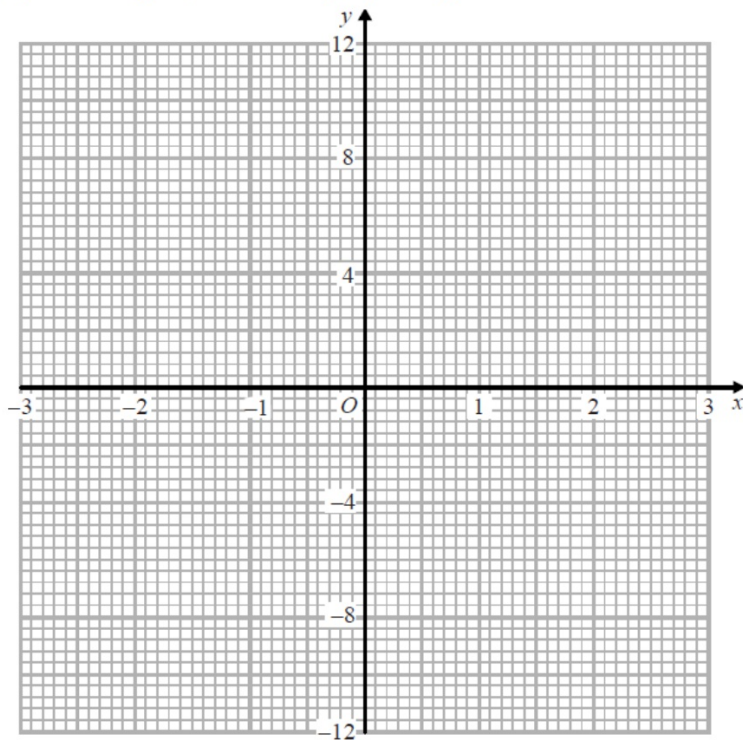
Edexcel

26 (a) Complete the table of values for $y = x^3 + x^2 - 2x + 1$

Created by W Neill

x	-3	-2	-1	0	1	2
y		1	3		1	

(b) On the grid, draw the graph of $y = x^3 + x^2 - 2x + 1$ for values of x from -3 to 2



(2)

(Total for Question 26 is 4 marks)

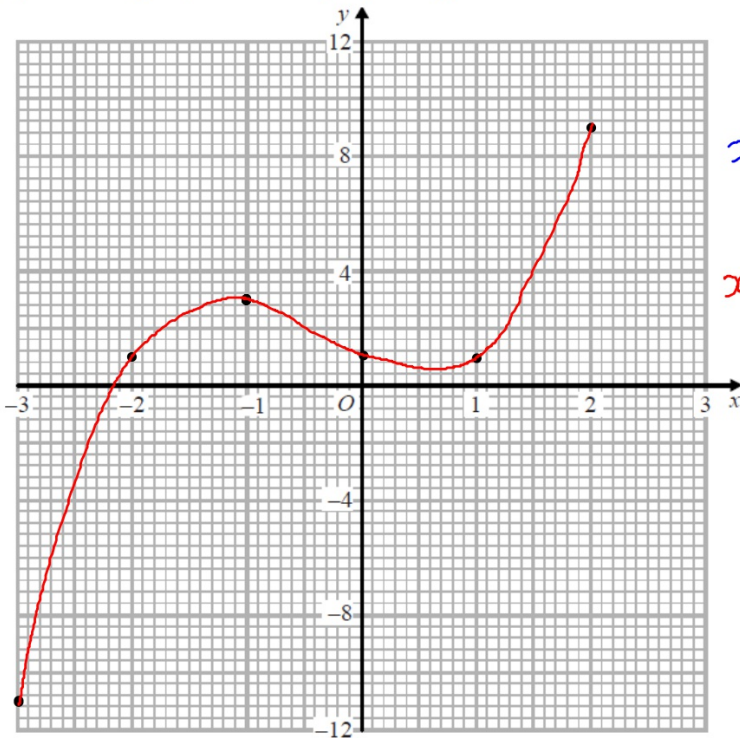
26 (a) Complete the table of values for $y = x^3 + x^2 - 2x + 1$

Created by W Neill

x	-3	-2	-1	0	1	2
y	-11	1	3	1	1	9

x^3 ✗

(b) On the grid, draw the graph of $y = x^3 + x^2 - 2x + 1$ for values of x from -3 to 2



$$y = x^3 + x^2 - 2x + 1$$

$$x=2 \quad y = 8 + 4 - 4 + 1 = 9$$

$$x=-3 \quad y = -27 + 9 + 6 + 1$$

$$-27 + 16$$

$$-3x - 3x - 3$$

$$-3x - 3 = +9$$

(2)

(Total for Question 26 is 4 marks)

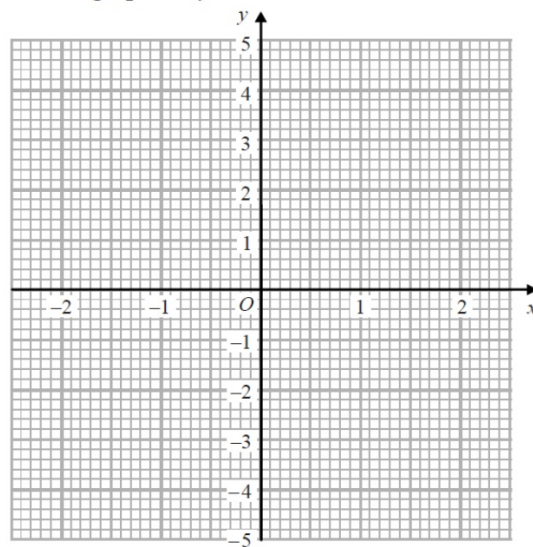
27 (a) Complete the table of values for $y = x^3 - 3x + 1$ (2)

Video created by W Neill

A37

x	-2	-1	0	1	2
y					

(b) On the grid below, draw the graph of $y = x^3 - 3x + 1$ for values of x from -2 to 2 (2)



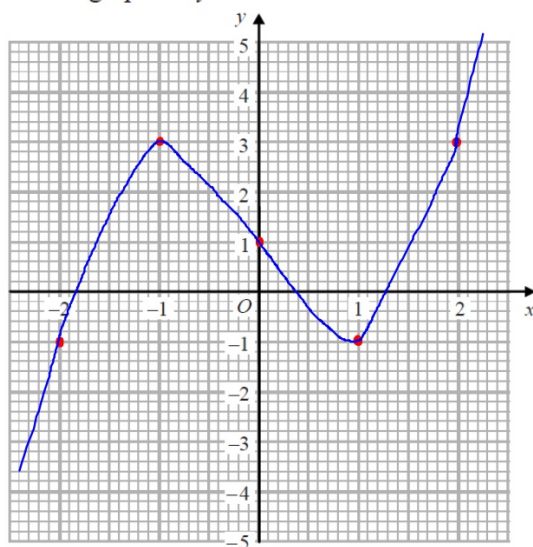
27 (a) Complete the table of values for $y = x^3 - 3x + 1$ (2) ↩

Video created by W Neill

A37

x	-2	-1	0	1	2
y	-1	3	1	-1	3

(b) On the grid below, draw the graph of $y = x^3 - 3x + 1$ for values of x from -2 to 2 (2)



x^3

AQA

27 (a) $h(x) = \sqrt[3]{x}$ for all values of x

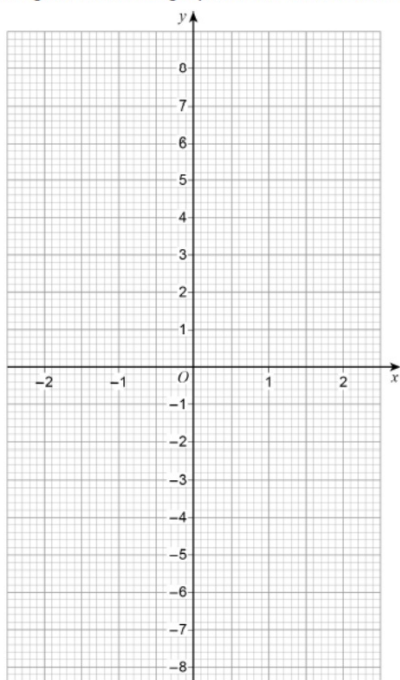
Video created by W Neill

A37

A66

On the grid, draw the graph of the inverse function $y = h^{-1}(x)$ for $-2 \leq x \leq 2$

[2 marks]

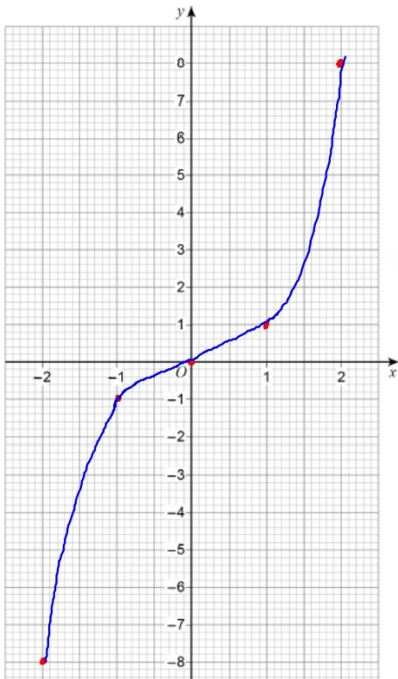


27 (a) $h(x) = \sqrt[3]{x}$ for all values of x

Video created by W Neill

A37
A66

On the grid, draw the graph of the inverse function $y = h^{-1}(x)$ for $-2 \leq x \leq 2$



[2 marks]

Handwritten notes and a table:

$y = x^3$ (with a red arrow pointing to the table)

$\sqrt[3]{x}$ (with a red arrow pointing to the word "inverse")

x	-2	-1	0	1	2
y	-8	-1	0	1	8

$-|x-|x-1$

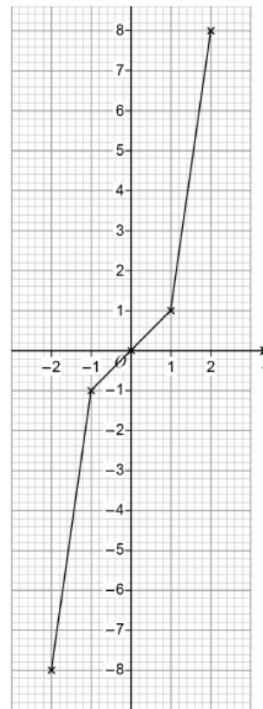
12 Lewis wants to draw the graph $y = x^3$ for values of x from -2 to 2

Video created by W Neill

Here is his graph.

Make **one** criticism of his graph. [1 mark]

A37



12 Lewis wants to draw the graph $y = x^3$ for values of x from -2 to 2

Video created by W Neill

Here is his graph.

Make **one** criticism of his graph. [1 mark]

A37

Should be a smooth curve.

