VCE MATHEMATICAL METHODS UNITS 1&2

UNIT 1 AOS 1 - FUNCTIONS AND GRAPHS - TOPIC EXAM 1 - (TECH FREE)

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STRUCTURE OF EXAM

Section A - Short Answer	5 questions	13 marks
		13 marks

WHEN YOU FINISH

Get your marks, and view solution videos that explain the answer to each question at:

edrolo.com.au/e325

SECTION A – SHORT ANSWER

Question 1   2 marks

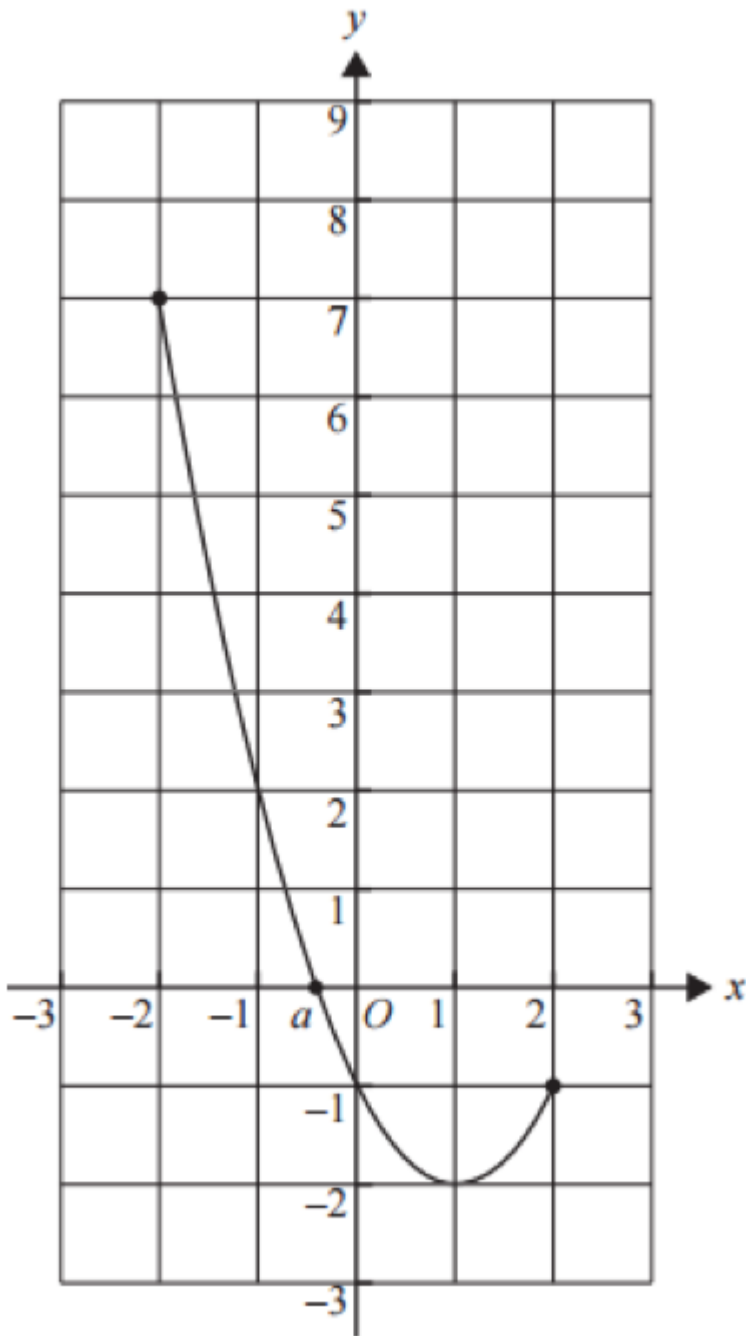The rule for function h is $h(x) = 2x^3 + 1$. Find the rule for the inverse function h^{-1}.

Question 2   1 mark

The graph of $f(x) = (x-1)^2 - 2$, $x \in [-2,2]$, is shown below. The graph intersects the x-axis where $x = a$.
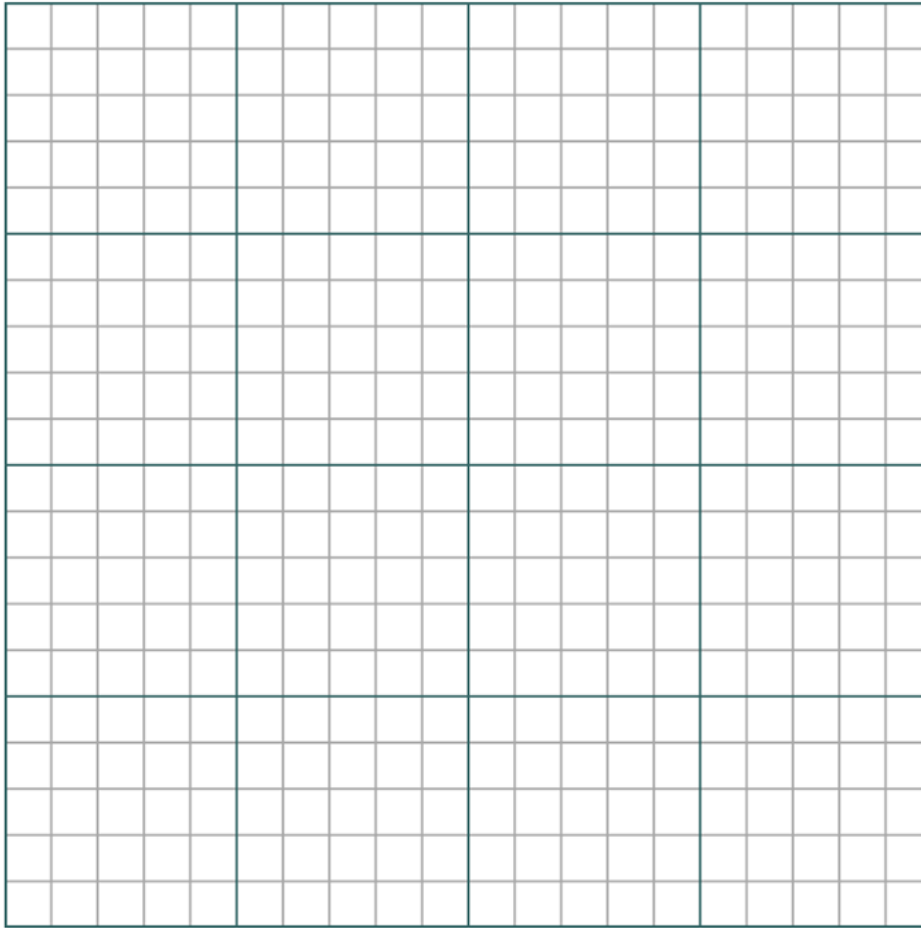
Find the value of a.

Question 3   2 marks

Sketch the graph of $f(x) = \frac{1}{2}(x-2)(x+1)^2$ for $x \in [-2,3]$ on the axes provided. Label all intercepts and endpoints

Question 4 (6 marks)

Question 4.a   1 mark

Show that $(x-3)$ is a factor of the polynomial $P(x) = 2x^3 - 11x^2 + 18x - 9$.

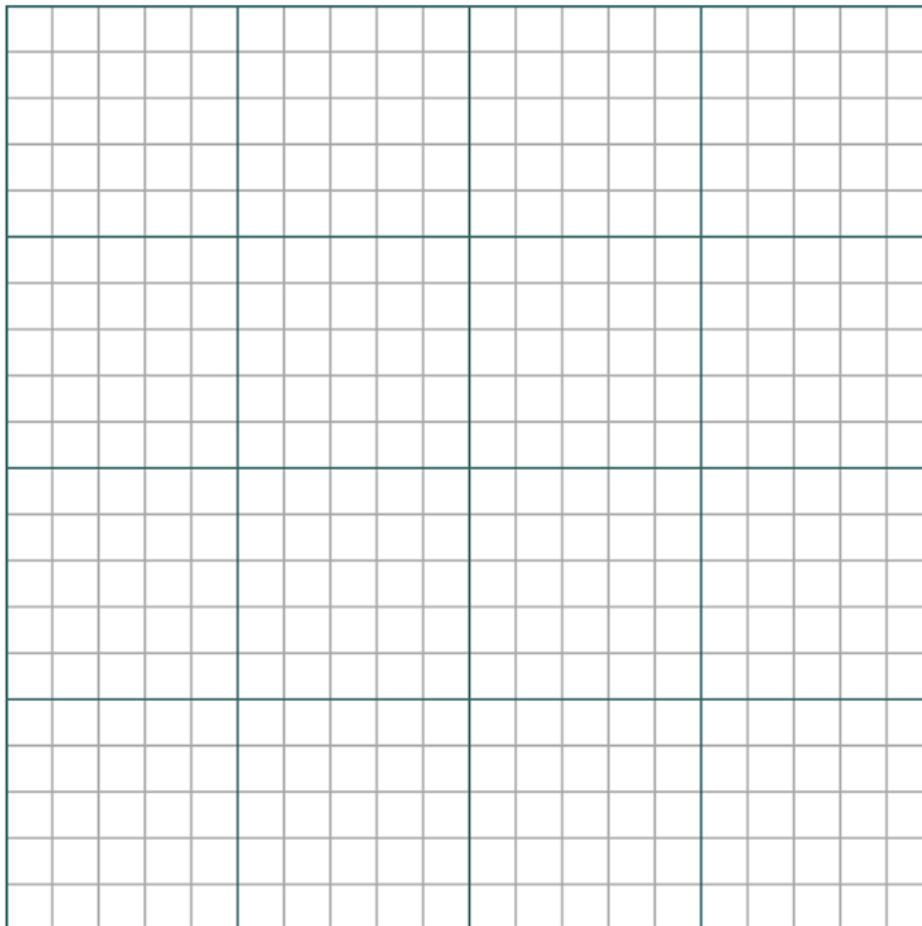**Question 4.b**   2 marks

$P(x) = 2x^3 - 11x^2 + 18x - 9$

Find all linear factors of $P(x)$

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Question 4.c   3 marks

Sketch a graph of $P(x) = 2x^3 - 11x^2 + 18x - 9$, labelling all intercepts. (Turning point is not required.)

Question 5   2 marks

Sketch the graph of $f:[-5,4)\rightarrow R, f(x) = -\sqrt{4-x}$

Label all key features as coordinates.