Name: _____

GCSE (1 – 9)

Cubic and Reciprocal Graphs

Instructions

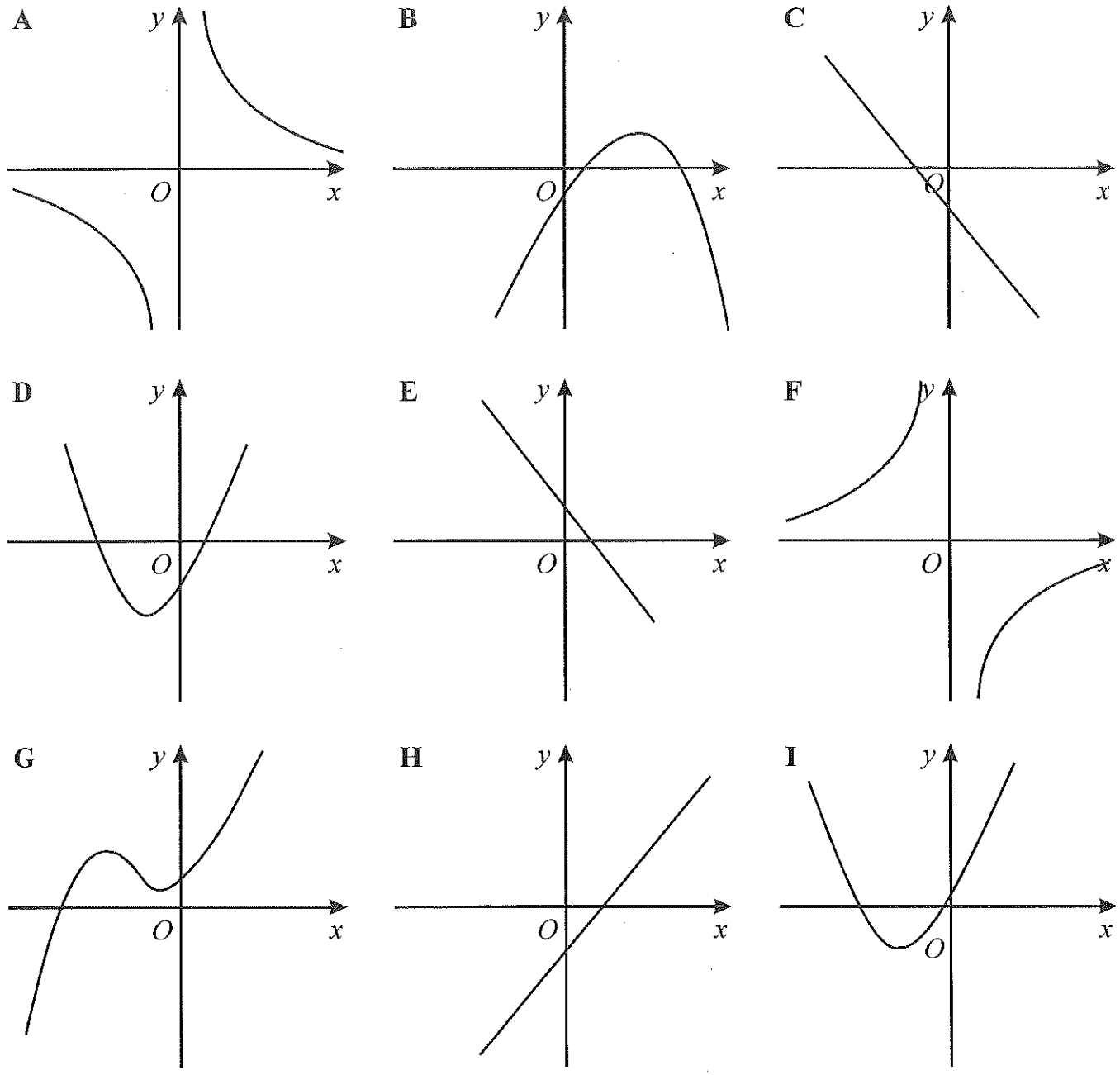
- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end



1. Write down the letter of the graph which could have the equation

$(i)\ y=3x-2$ ..... H ..... (1)

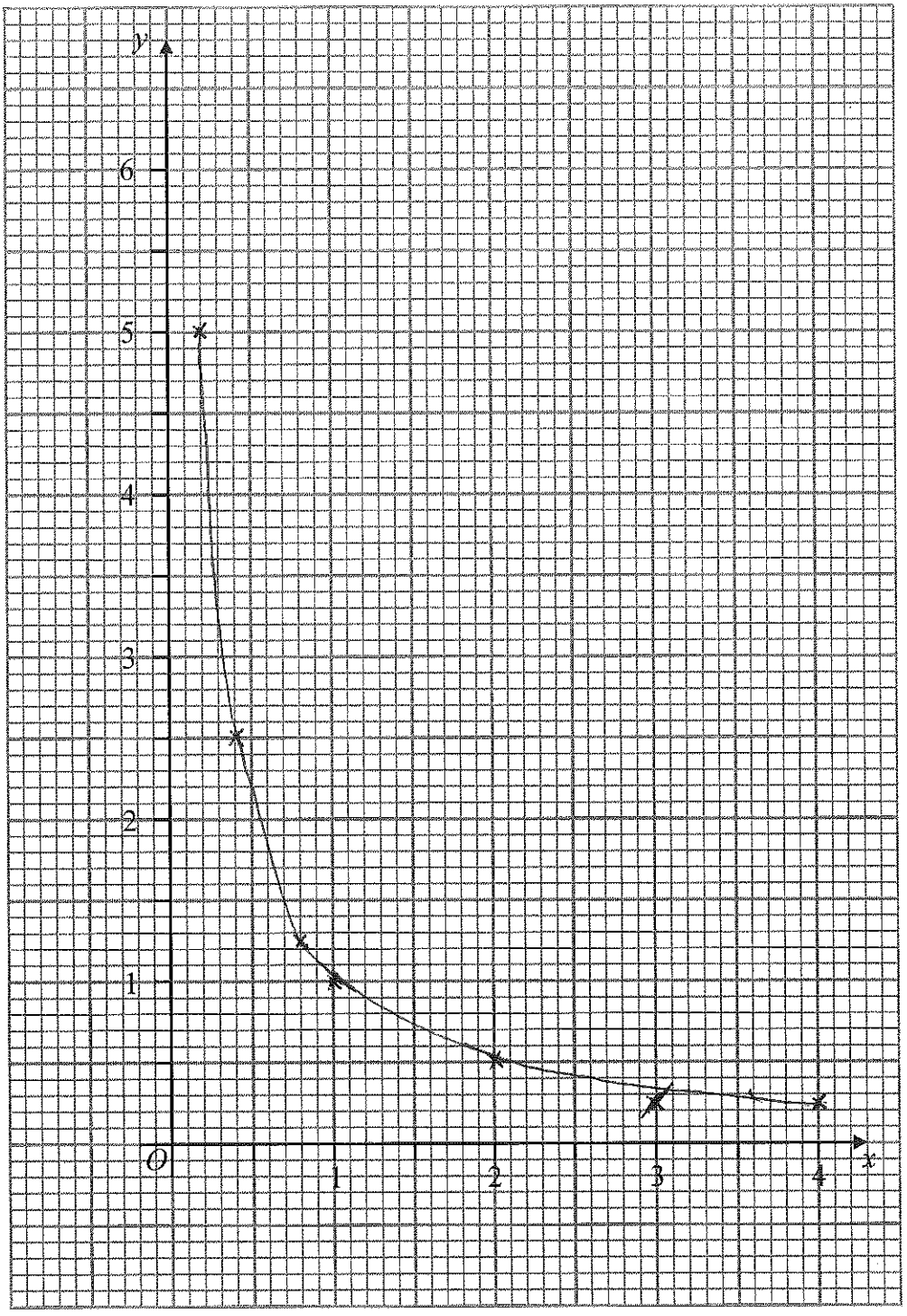
$(ii)\ y=2x^2+5x-3$ ..... D ..... (1)

$(iii)\ y=\frac{3}{x}$ ..... A ..... (1)

2.(a) Complete the table of values for $y = \frac{1}{x}$ (2)

x	0.2	0.4	0.8	1.0	2.0	4.0
y	5.0	2.5	1.25	1.0	0.5	0.25

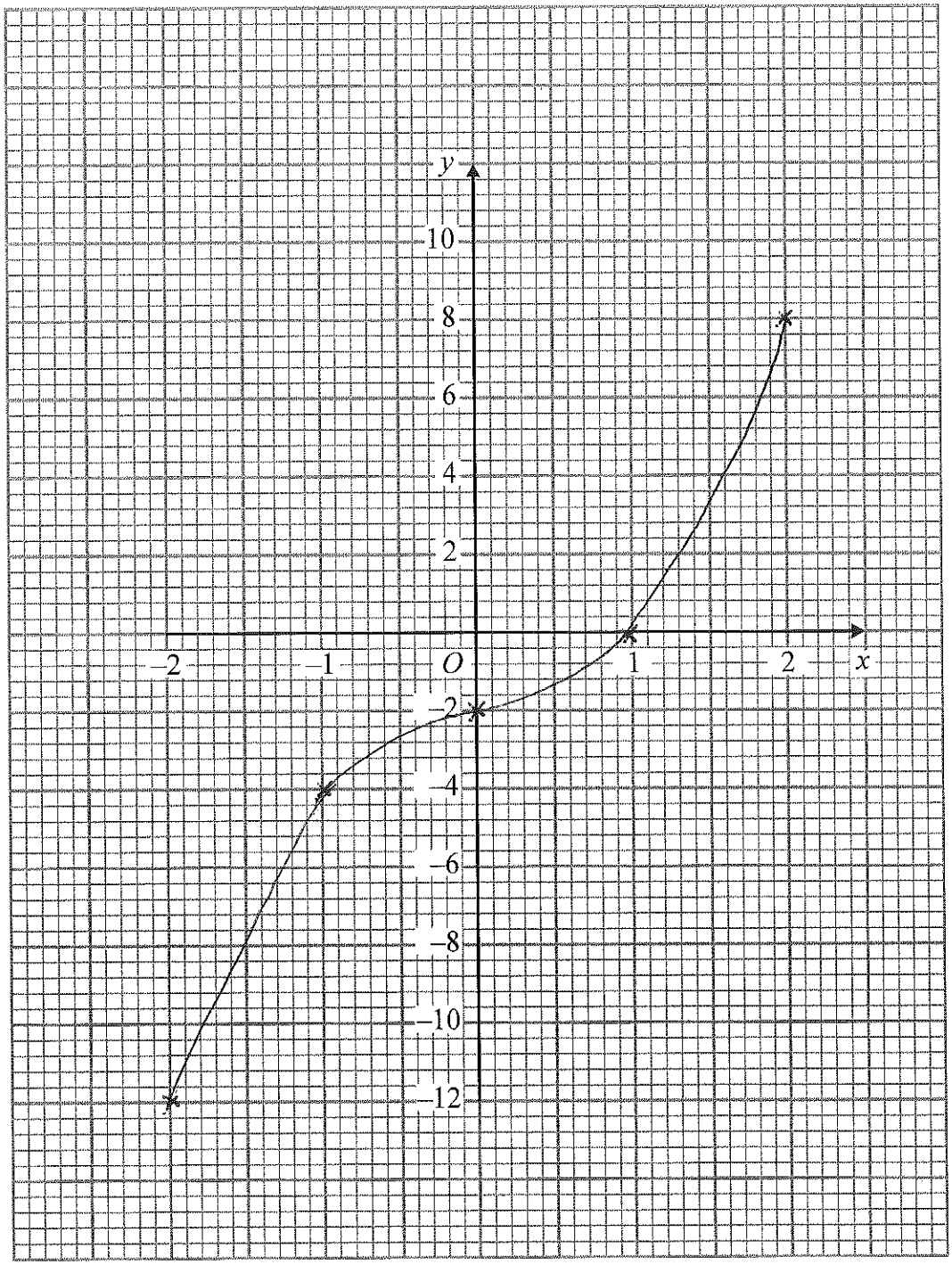
b) On the grid, draw the graph of $y = \frac{1}{x}$ (2)



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

x	−2	−1	0	1	2
y	−12	−4	−2	0	8

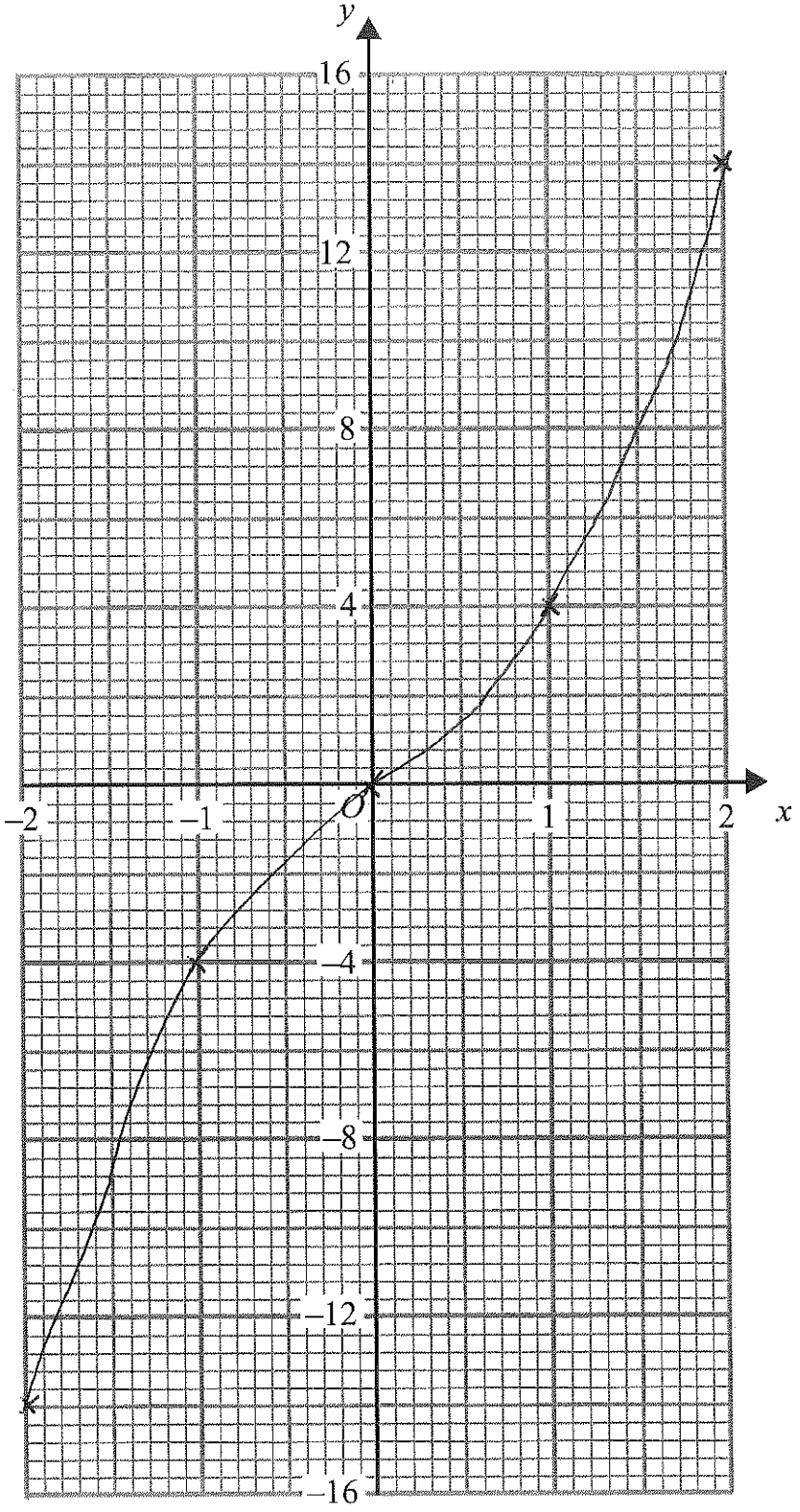
b) On the grid, draw the graph of $y = y = x^3 + x - 2$



4.(a) Complete the table of values for $y = x^3 + 3x$ (2)

x	−2	−1	0	1	2
y	−14	−4	0	4	14

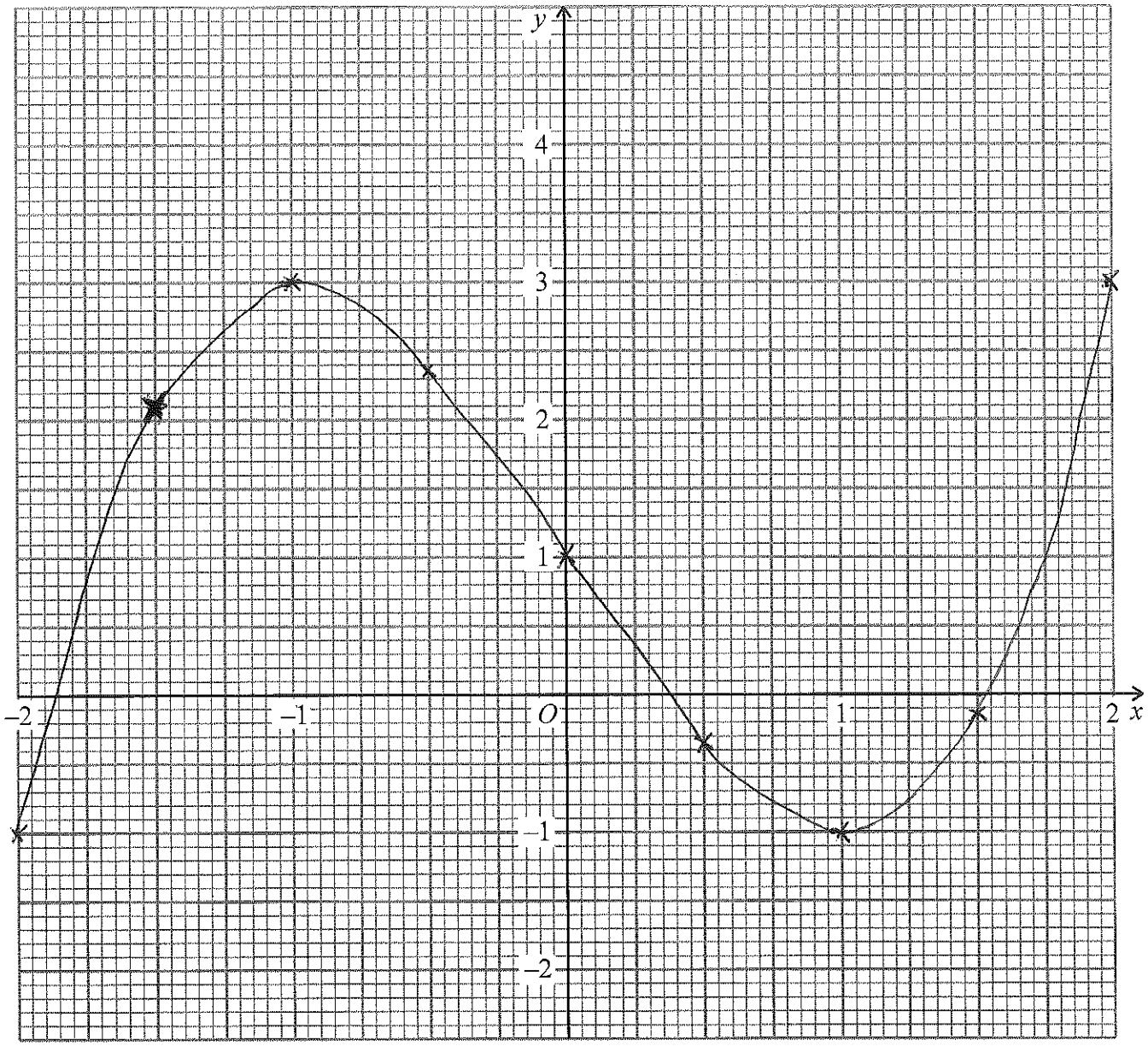
b) On the grid, draw the graph of $y = y = x^3 + 3x$ (2)



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

x	−2	−1.5	−1	−0.5	0	0.5	1	1.5	2
y	−1	2.125	3	2.375	1	−0.375	−1	−0.125	3

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



6.(a) Complete the table of values for $y = x + \frac{1}{x}$ (2)

x	0.2	0.4	0.6	0.8	1	2	4	5
y	5.2	2.9	2.27	2.05	2	2.5	4.25	5.2

(2 dp)

b) On the grid, draw the graph of $y = x + \frac{1}{x}$ (2)