Name:

Exam Style Questions

Reciprocal Graphs

Corbettmaths

Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 346

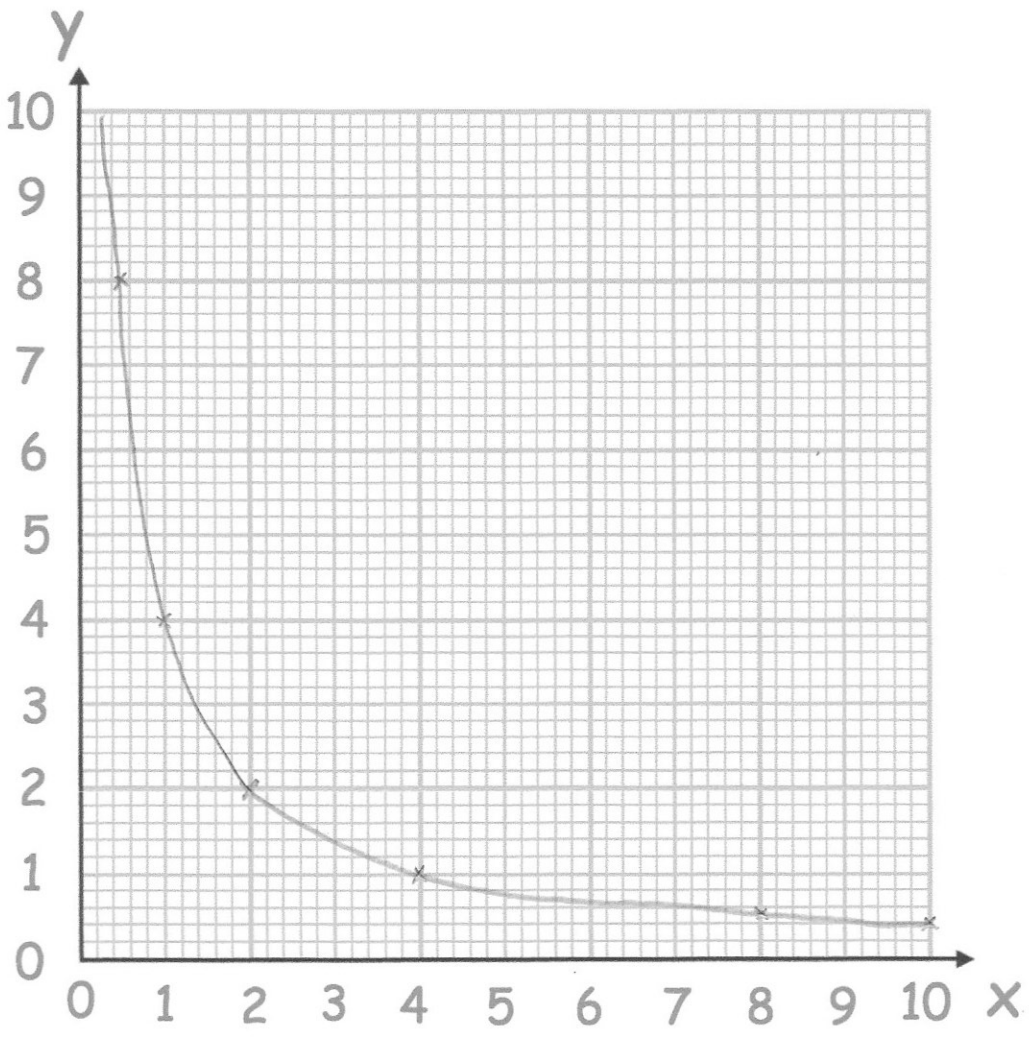
Answers and Video Solutions

1. (a) Complete the table of value for $y = \frac{4}{x}$

x	0.5	1	2	4	8	10
y	8	4	2	1	0.5	0.4

(2)

(b) On the grid, draw the graph of $y = \frac{4}{x}$ for $0.5 \leq x \leq 10$



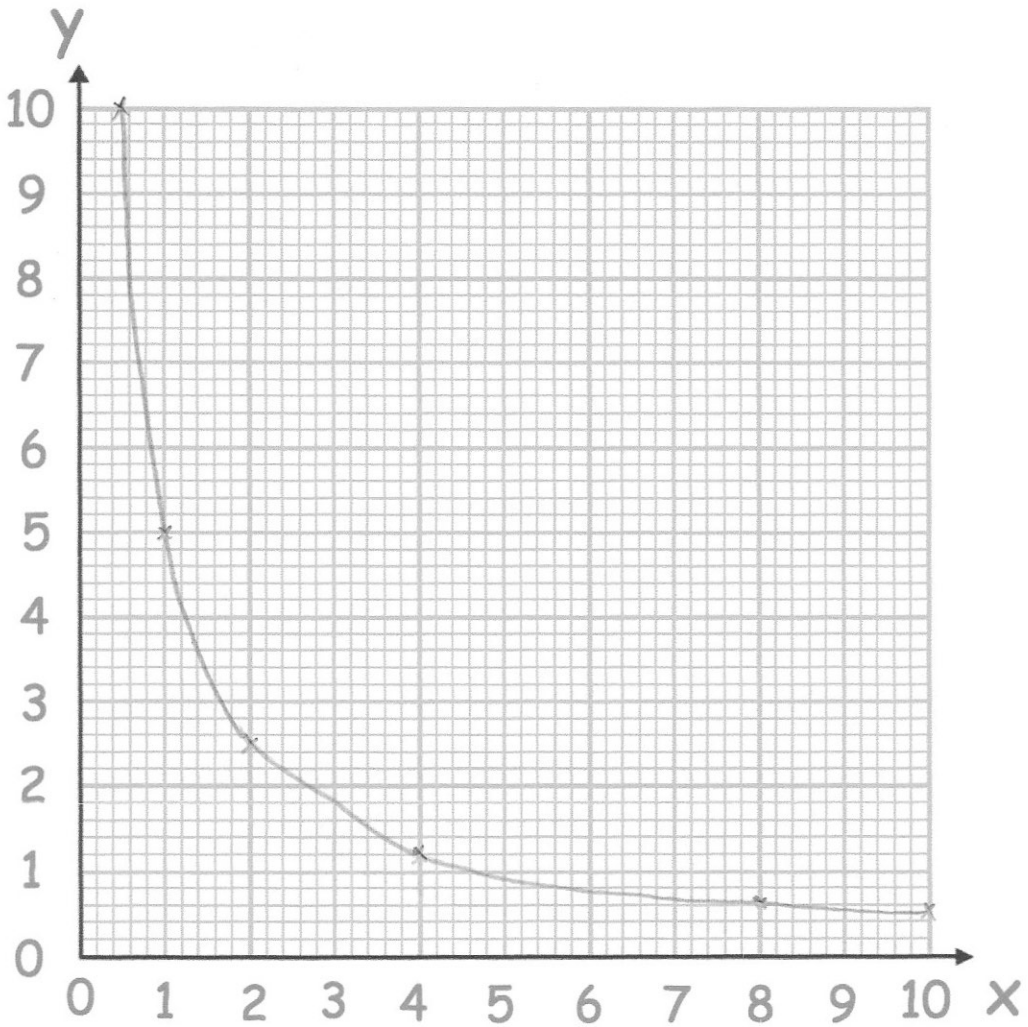
(2)

2. Complete the table of values for $y = \frac{5}{x}$

x	0.5	1	2	4	8	10
y	10	5	2.5	1.25	0.625	0.5

(2)

(b) On the grid, draw the graph of $y = \frac{5}{x}$ for $0.5 \leq x \leq 10$



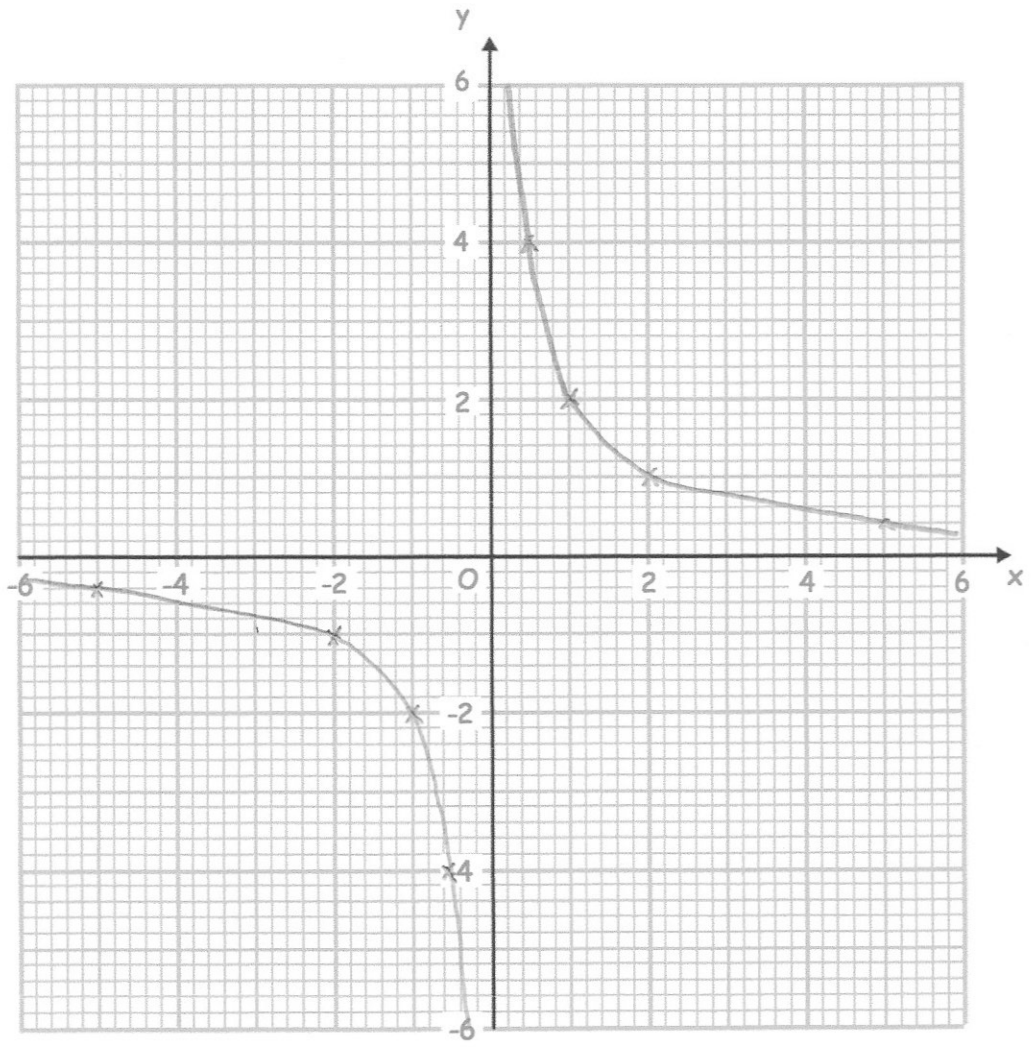
(2)

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

x	-5	-2	-1	-0.5	0.5	1	2	5
y	-0·4	-1	-2	-4	4	2	1	0·4

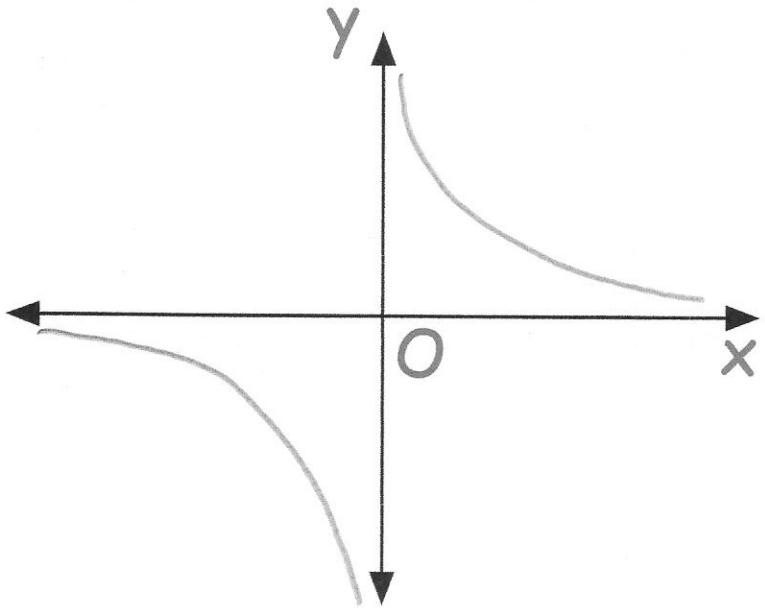
(2)

(b) On the grid, draw the graph of $y = \frac{2}{x}$ for $-5 \leq x \leq 5, x \neq 0$



(2)

4.



Sketch the graph of $y = \frac{1}{x}$

(2)

5. Circle the coordinates of the point that lies on the graph of $y = \frac{6}{x}$

$(6, 0)$	$(-1, 6)$	$(6, 1)$	$(0, 6)$
$x = 6$	$x = -1$	$x = 6$	$x = 0$
$y = 1$	$y = -6$	$y = 1$	y is undefined

(1)

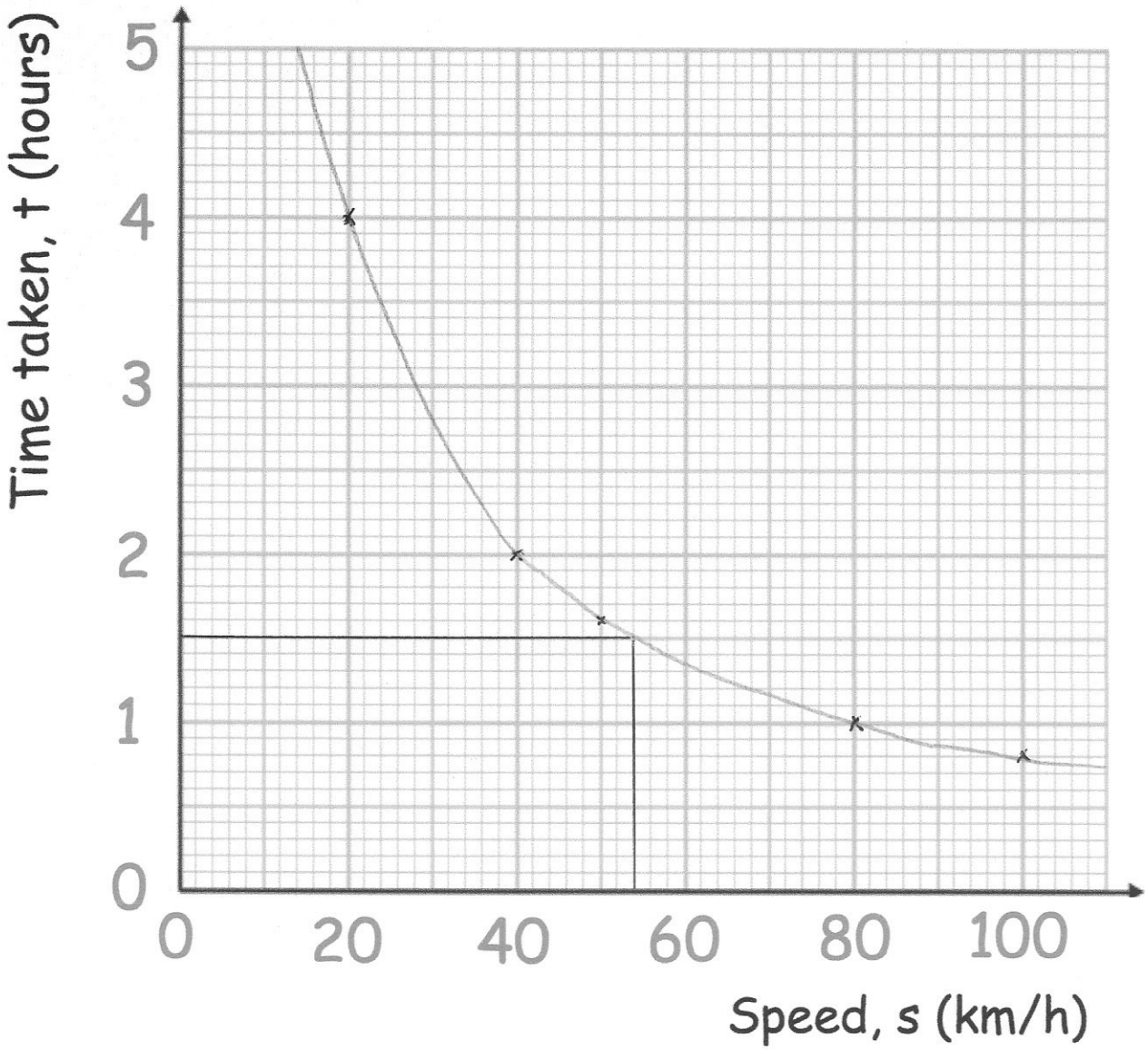
6. Circle the coordinates of the point that does **not** lie on the graph of $y = \frac{8}{x}$

$(8, 1)$	$(-2, 4)$	$(-4, -2)$	$(0.5, 16)$
$x = 8$	$x = -2$	$x = -4$	$x = 0.5$
$y = 1$	$y = -4$	$y = -2$	$y = 16$

(1)

7. The time taken by a car to complete a journey is given by $t = \frac{80}{s}$

s is the speed of a car in km/h.
t is the time taken to complete the journey, in hours.



(a) On the grid above, draw the graph of $t = \frac{80}{s}$ for $20 \leq s \leq 100$ **(2)**

s	10	20	40	50	80	100
t	8	4	2	1.6	1	0.8

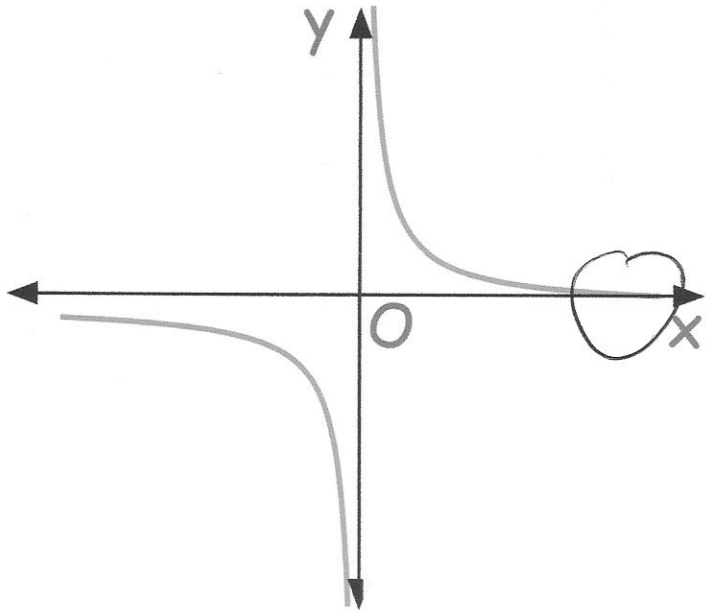
A journey takes 1.5 hours.

(b) Use your graph to estimate the speed, s, of the car.

54 km/h

(2)

8. Alessia sketched the graph of $y = \frac{k}{x}$ where k is a positive constant.



Alessia has made a mistake.

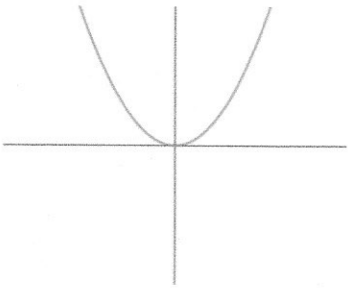
Explain her mistake.

The graph should not touch the x-axis.
The x-axis is an asymptote.

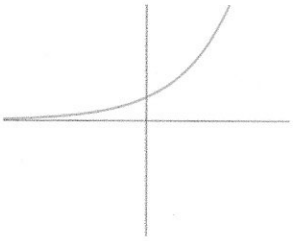
(1)

9. Match each graph to the correct equation

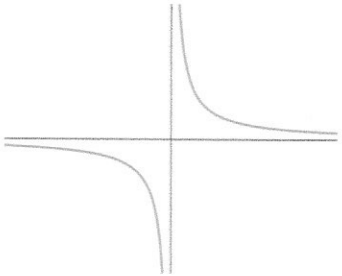
Graph A



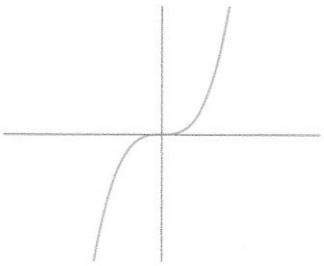
Graph B



Graph C



Graph D



$y = x^2$ is graph **A**

$y = x^3$ is graph ...D...

$y = 2^x$ is graph ...B...

$y = \frac{1}{x}$ is graph ...C...

(2)

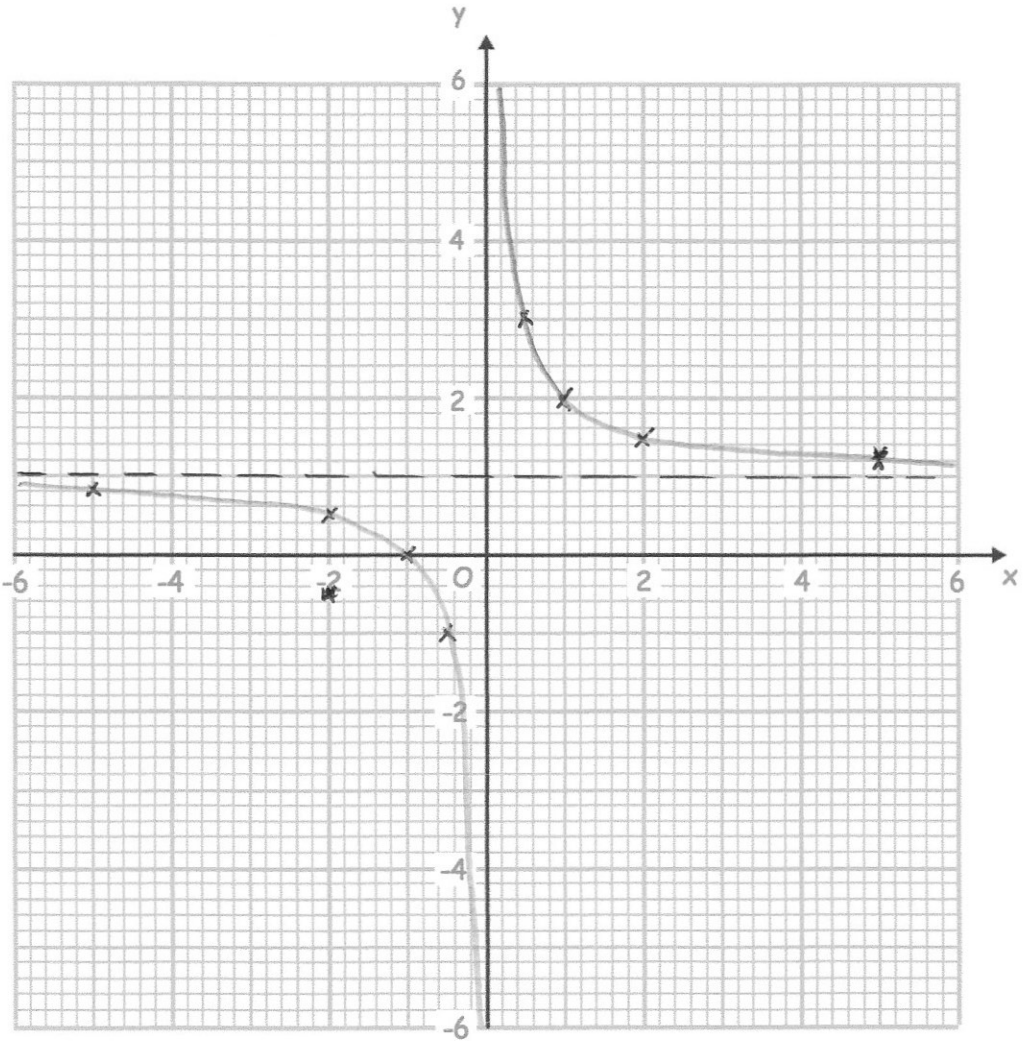
10. (a) Complete the table of values for $y = \frac{1}{x} + 1$

x	-5	-2	-1	-0.5	0.5	1	2	5
y	0.8	0.5	0	-1	3	2	1.5	1.2

1 + 2

(2)

(b) On the grid, draw the graph of $y = \frac{1}{x} + 1$ for $-5 \leq x \leq 5, x \neq 0$



(2)