Name: _____

GCSE (1 - 9) Cubic and Reciprocal Graphs	Solutions:

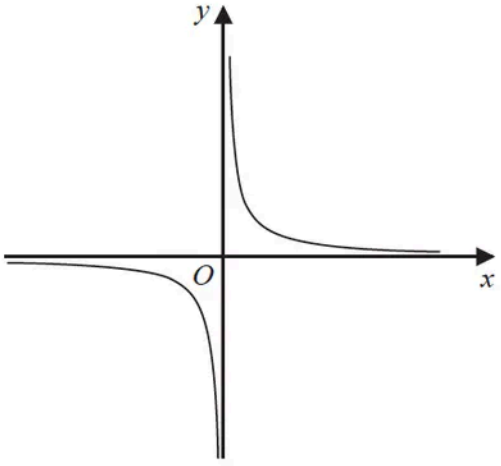
These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***Summer 2023*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are released these worksheets will gradually be updated
The ***most current*** version of these worksheets will always be available at: kennethstafford.co.uk

Question	Where the question appeared
1	Edexcel, GCSE, Autumn 2020, Paper 1H, Q3
2	Edexcel, GCSE, Autumn 2020, Paper 2H, Q4
3	Edexcel, GCSE, Autumn 2019, Paper 2H, Q5
4	Edexcel, GCSE, Summer 2019, Paper 3H, Q17
5	Edexcel, GCSE, Autumn 2018, Paper 2H, Q14
6	Edexcel, GCSE, Summer 2017, Paper 2H, Q14
7	Edexcel, GCSE, Summer 2017, Paper 3H, Q20
8	Edexcel, GCSE, Summer 2023, Paper 2F, Q28

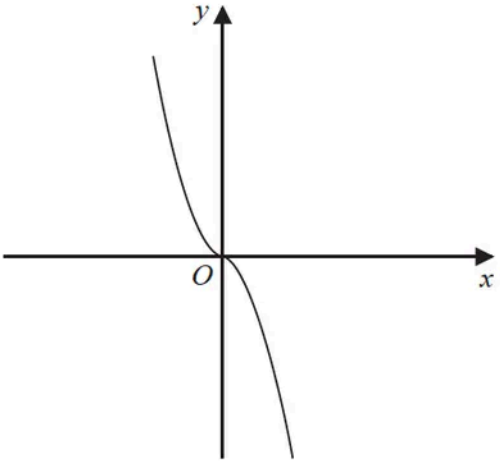
Cubic and Reciprocal Graphs (Questions from Past Papers)

1

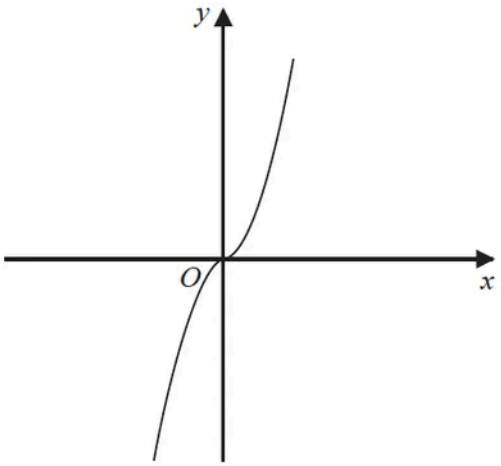
The diagram shows four graphs.



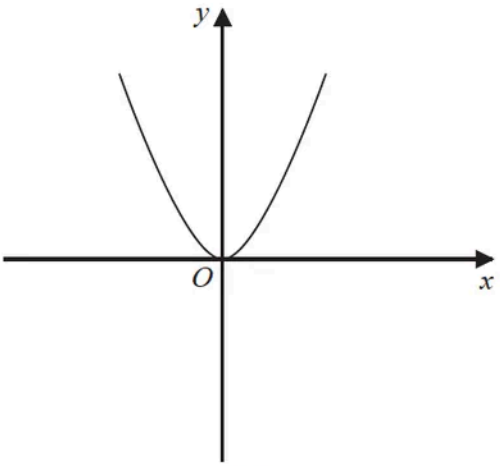
Graph **A**



Graph **B**



Graph **C**



Graph **D**

Each of the equations in the table is the equation of one of the graphs.

Complete the table.

Equation	Letter of graph
$y = -x^3$	
$y = x^3$	
$y = x^2$	
$y = \frac{1}{x}$	

(Total for Question 3 is 2 marks)

[Edexcel, GCSE, Autumn 2020, Paper 1H, Q3]

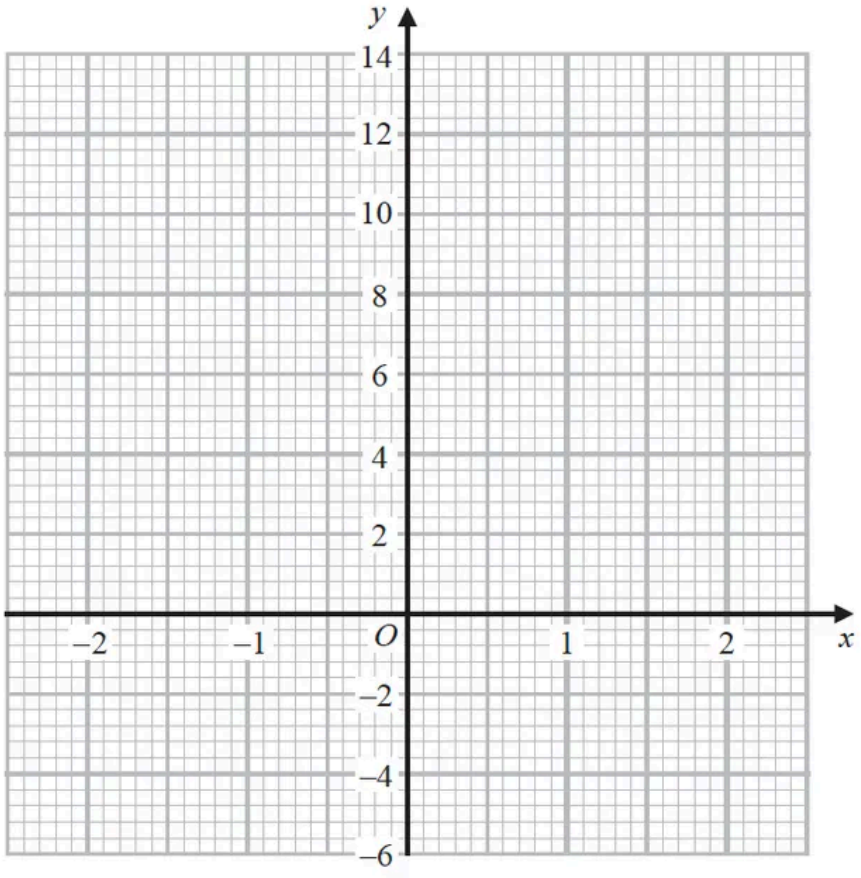
2

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

x	–2	–1	0	1	2
y		6			

(2)

(b) On the grid below, draw the graph of $y = 5 - x^3$ for values of x from –2 to 2



(2)

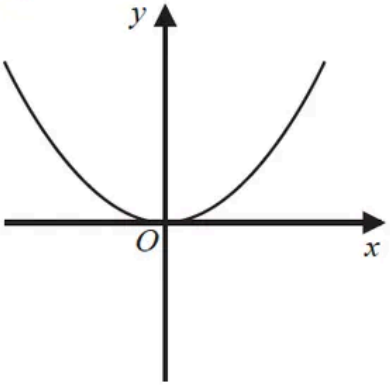
(Total for Question 4 is 4 marks)

[Edexcel, GCSE, Autumn 2020, Paper 2H, Q4]

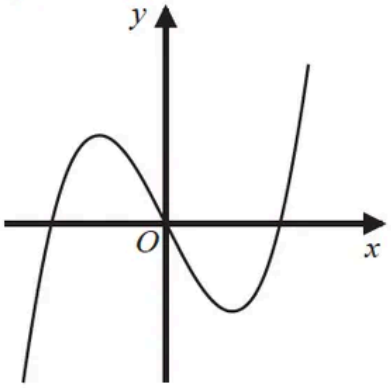
3

Here are six graphs.

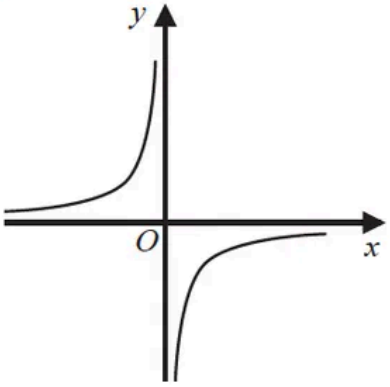
A



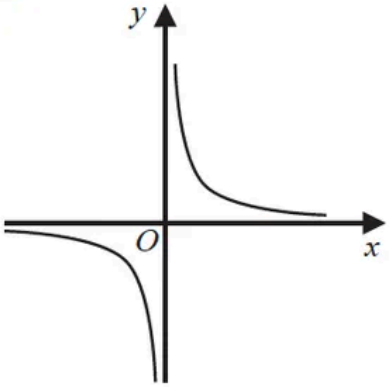
B



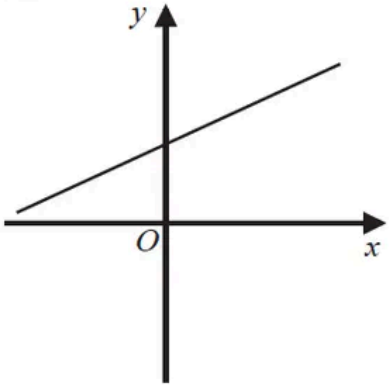
C



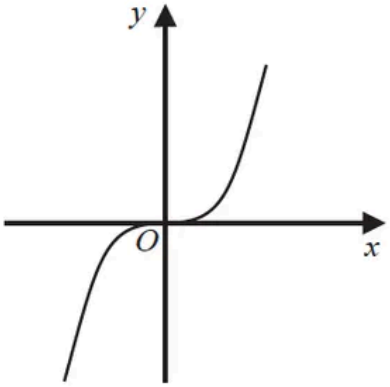
D



E



F



Write down the letter of the graph that could have the equation

(a) $y = x^3$

.....

(1)

(b) $y = \frac{1}{x}$

.....

(1)

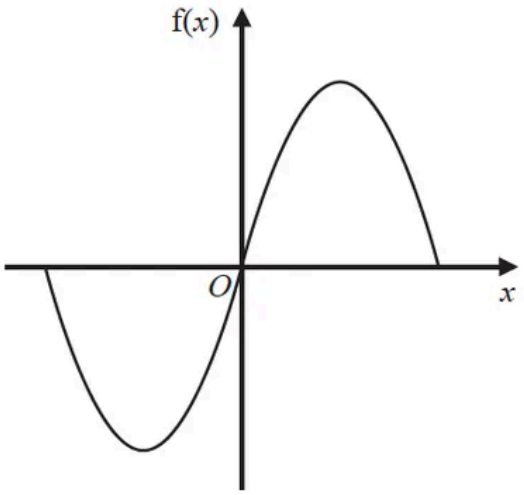
(Total for Question 5 is 2 marks)

[Edexcel, GCSE, Autumn 2019, Paper 2H, Q5]

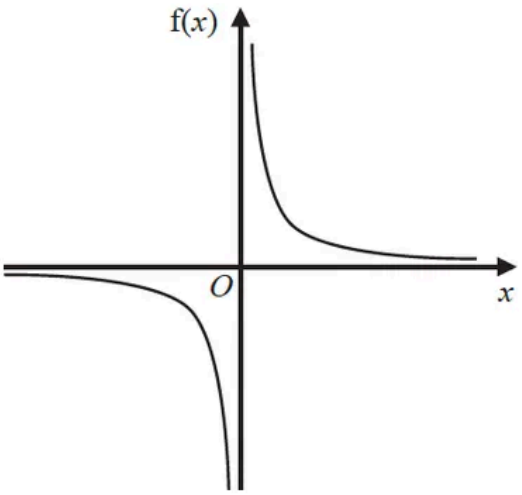
4

Here are four graphs.

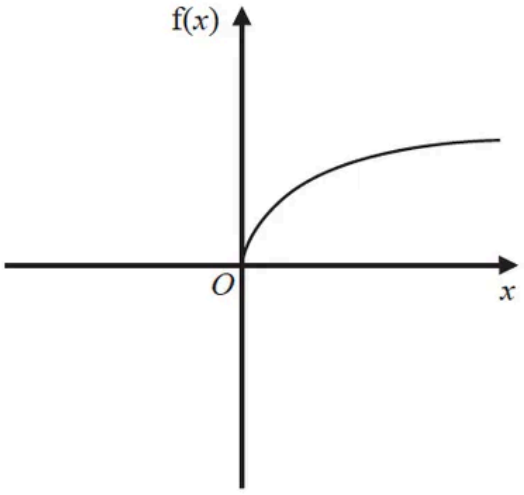
Graph A



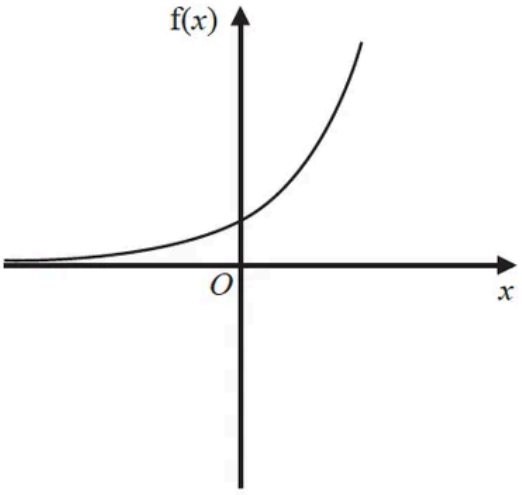
Graph B



Graph C



Graph D



The graphs represent four different types of function f.

Match each description of the function in the table to the letter of its graph.

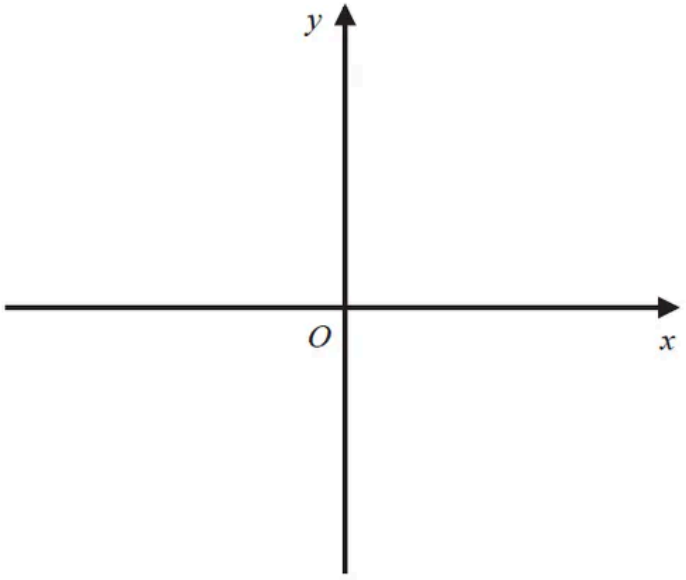
Description of function	**Graph**
f(x) is inversely proportional to x	
f(x) is a trigonometrical function	
f(x) is an exponential function	
f(x) is directly proportional to $\sqrt{x}$	

(Total for Question 17 is 2 marks)

[Edexcel, GCSE, Summer 2019, Paper 3H, Q17]

5

On the grid, sketch the curve with equation $y = 2^x$
Give the coordinates of any points of intersection with the axes.



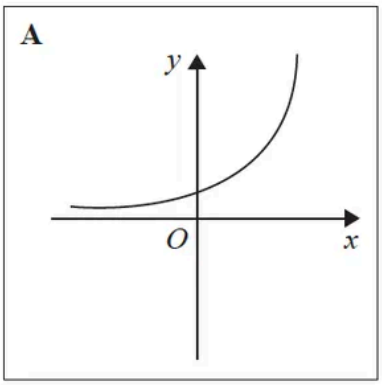
(Total for Question 14 is 2 marks)

[Edexcel, GCSE, Autumn 2018, Paper 2H, Q14]

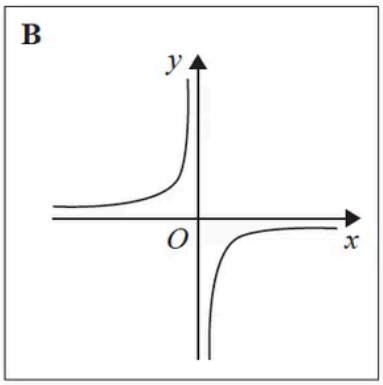
6

Here are some graphs.

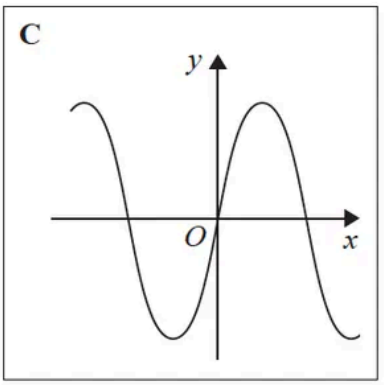
A



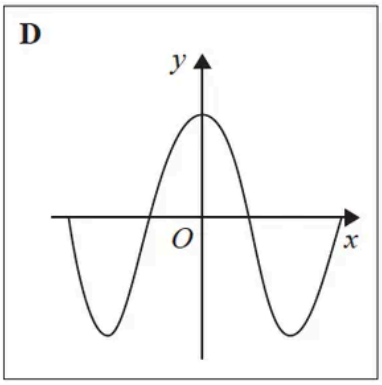
B



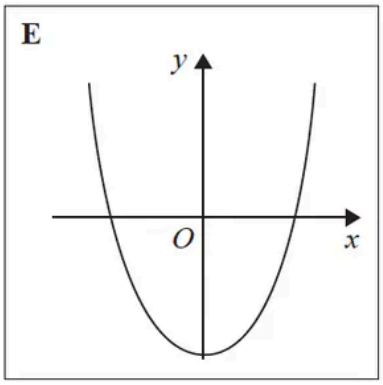
C



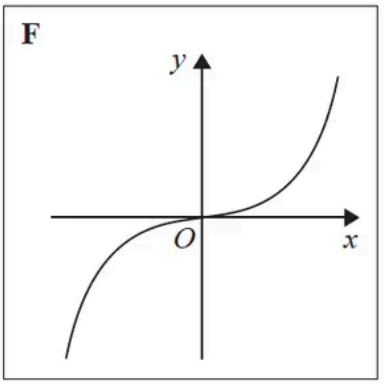
D



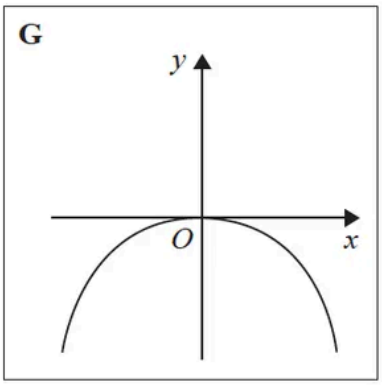
E



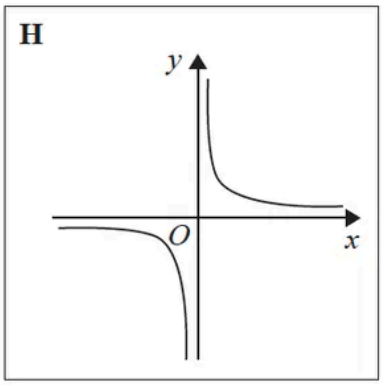
F



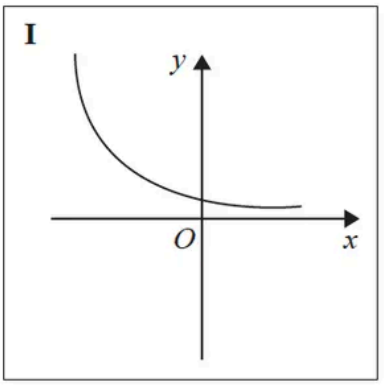
G



H



I



In the table below, match each equation with the letter of its graph.

Equation	Graph
$y = \sin x$	
$y = x^3 + 4x$	
$y = 2^x$	
$y = \frac{4}{x}$	

(Total for Question 14 is 3 marks)

[Edexcel, GCSE, Summer 2017, Paper 2H, Q14]

7

The equation of a curve is $y = a^x$

A is the point where the curve intersects the y-axis.

(a) State the coordinates of A.

(..... , ...)

(1)

The equation of circle **C** is $x^2 + y^2 = 16$

The circle **C** is translated by the vector $\begin{pmatrix} 3 \\ 0 \end{pmatrix}$ to give circle **B**.

(b) Draw a sketch of circle **B**.

Label with coordinates
the centre of circle **B**
and any points of intersection with the x-axis.

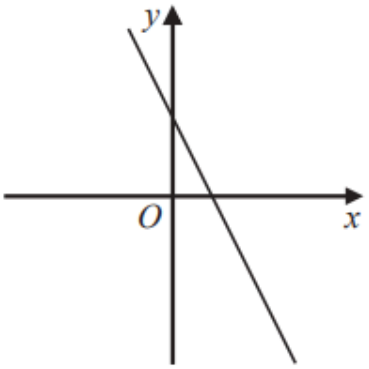
(3)

(Total for Question 20 is 4 marks)

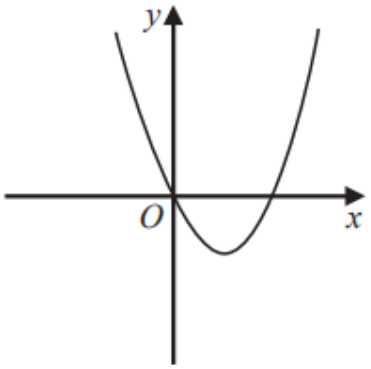
[Edexcel, GCSE, Summer 2017, Paper 3H, Q20]

8

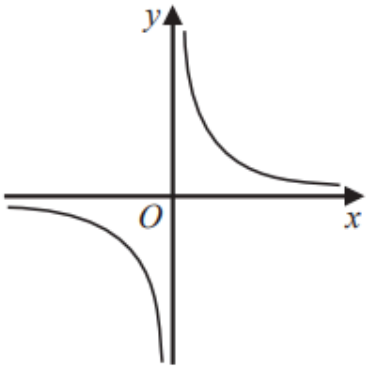
Here are five graphs.



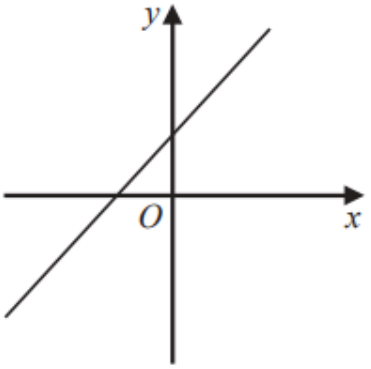
A



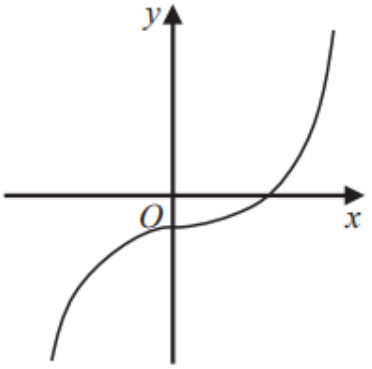
B



C



D



E

The table shows the equations of these graphs.

Equation	Graph
$y = x^2 - 4x$	
$y = x + 3$	
$y = x^3 - 2$	
$y = \frac{1}{x}$	
$y = 5 - 2x$	

Match the letter of each graph with its equation.

(Total for Question 28 is 3 marks)

[Edexcel, GCSE, Summer 2023, Paper 2F, Q28]