# Name: SOLUTIONS

# GCSE (1 - 9)

# Cubic and Reciprocal Graphs

Buy me a coffee

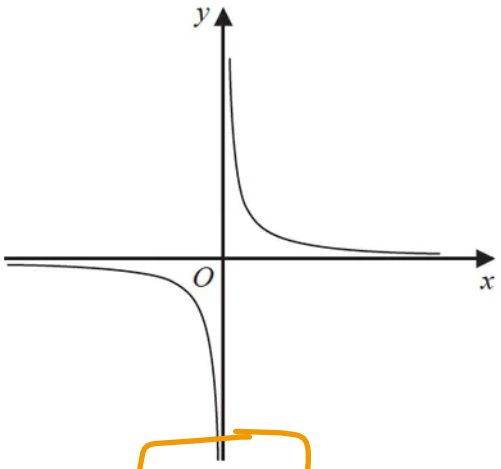
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These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***Summer 2023*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are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

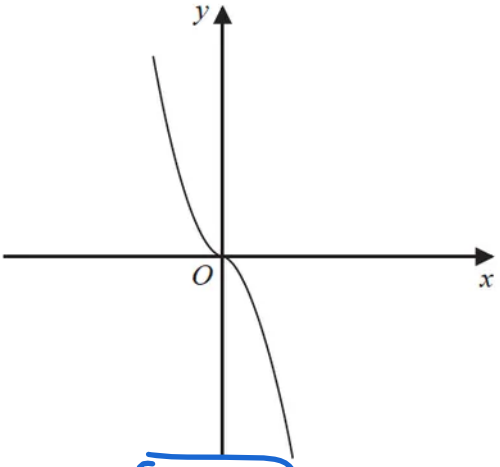
| Question | Where the question appeared |
|---|---|
| 1 | Edexcel, GCSE, Autumn 2020, Paper 1H, Q3 |
| 2 | Edexcel, GCSE, Autumn 2020, Paper 2H, Q4 |
| 3 | Edexcel, GCSE, Autumn 2019, Paper 2H, Q5 |
| 4 | Edexcel, GCSE, Summer 2019, Paper 3H, Q17 |
| 5 | Edexcel, GCSE, Autumn 2018, Paper 2H, Q14 |
|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

**1**

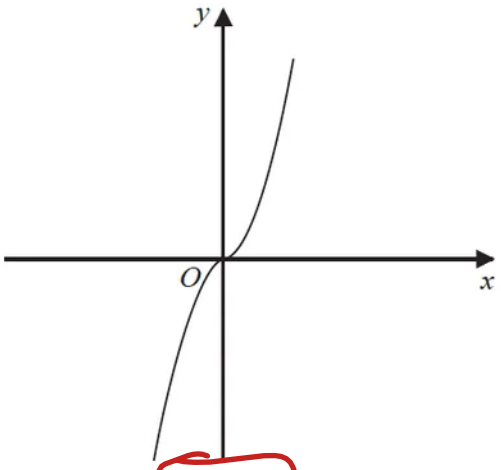
The diagram shows four graphs.



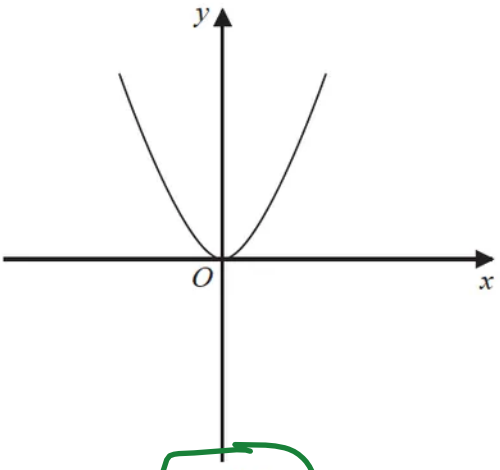

Graph **A**




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 |
|---|---|
| $y = -x^3$ | B |
| $y = x^3$ | C |
| $y = x^2$ | D |
| $y = \frac{1}{x}$ | A |

**(Total for Question 3 is 2 marks)**

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

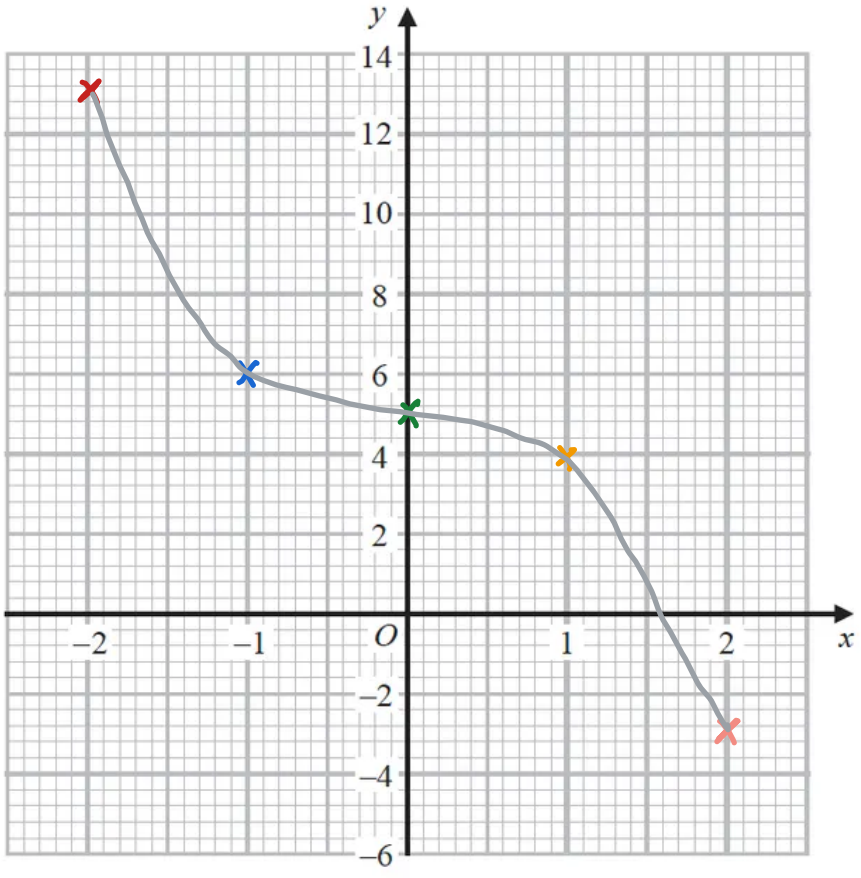
**2**

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

| $x$ | –2 | –1 | 0 | 1 | 2 |
|---|---|---|---|---|---|
| $y$ | 13 | 6 | 5 | 4 | -3 |

**(2)**

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




**(2)**

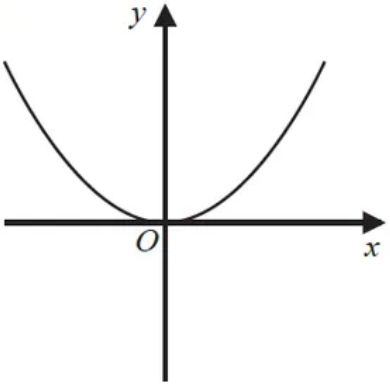
**(Total for Question 4 is 4 marks)**

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

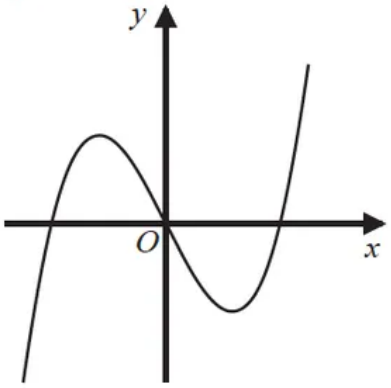
**3**

Here are six graphs.

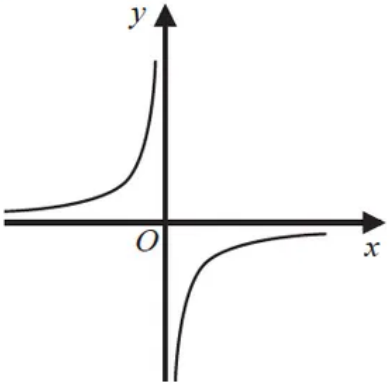
**A**



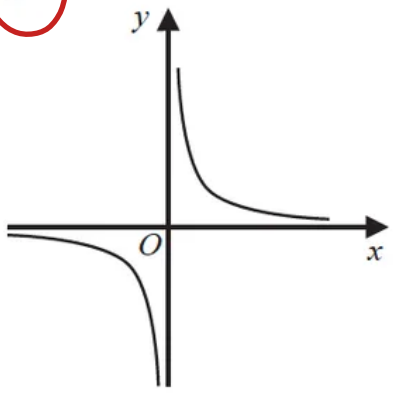

**B**



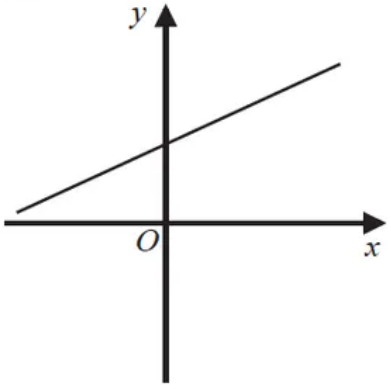

**C**



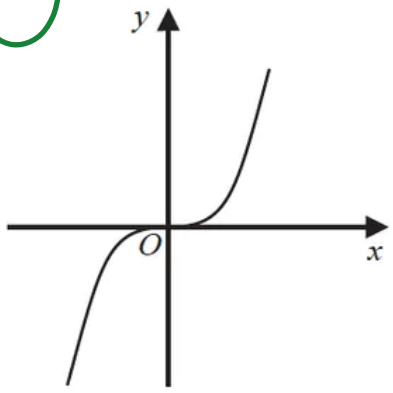

**D**




**E**




**F**




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

(a) $y = x^3$

F

(1)

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

D

(1)

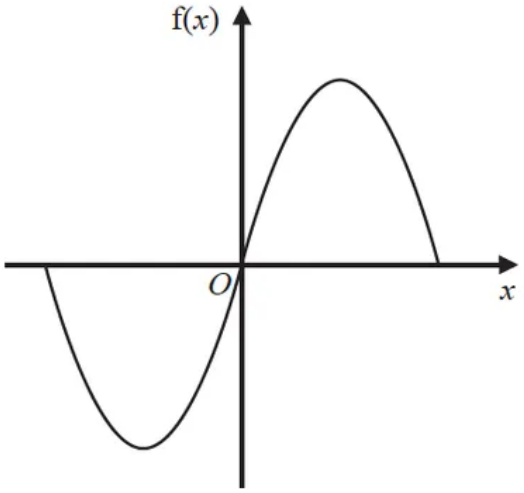
**(Total for Question 5 is 2 marks)**

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

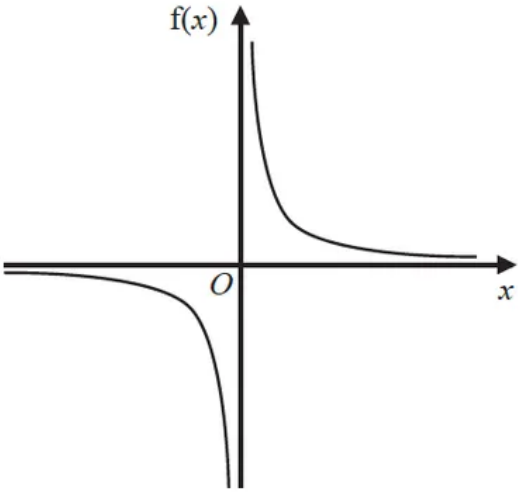
**4**

Here are four graphs.

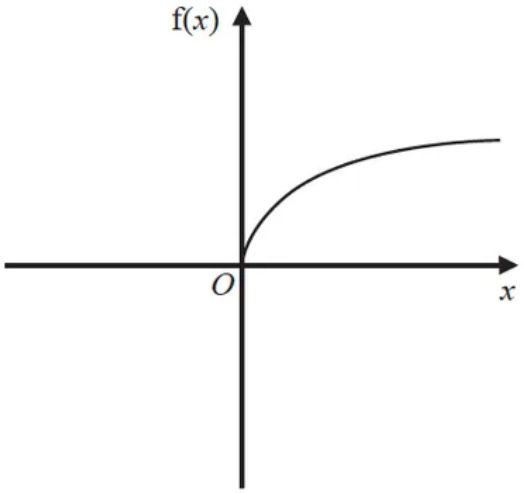
**Graph A**



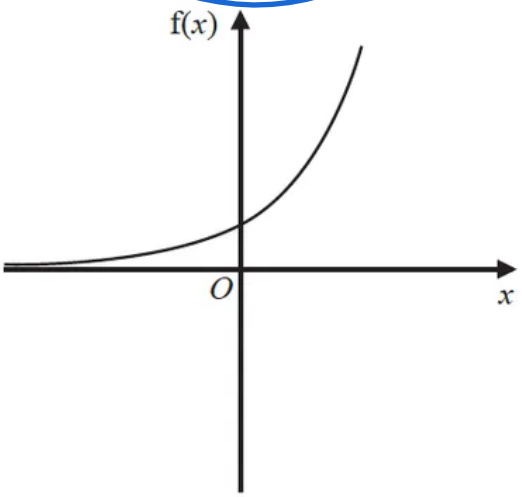

**Graph B**




**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 $x$ | B |
| f($x$) is a trigonometrical function | A |
| f($x$) is an exponential function | D |
| f($x$) is directly proportional to $\sqrt{x}$ | C |

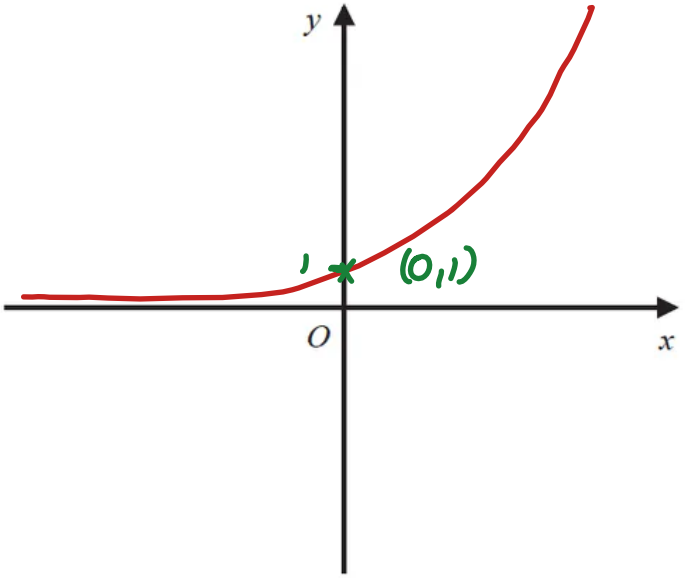
**(Total for Question 17 is 2 marks)**

*[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.

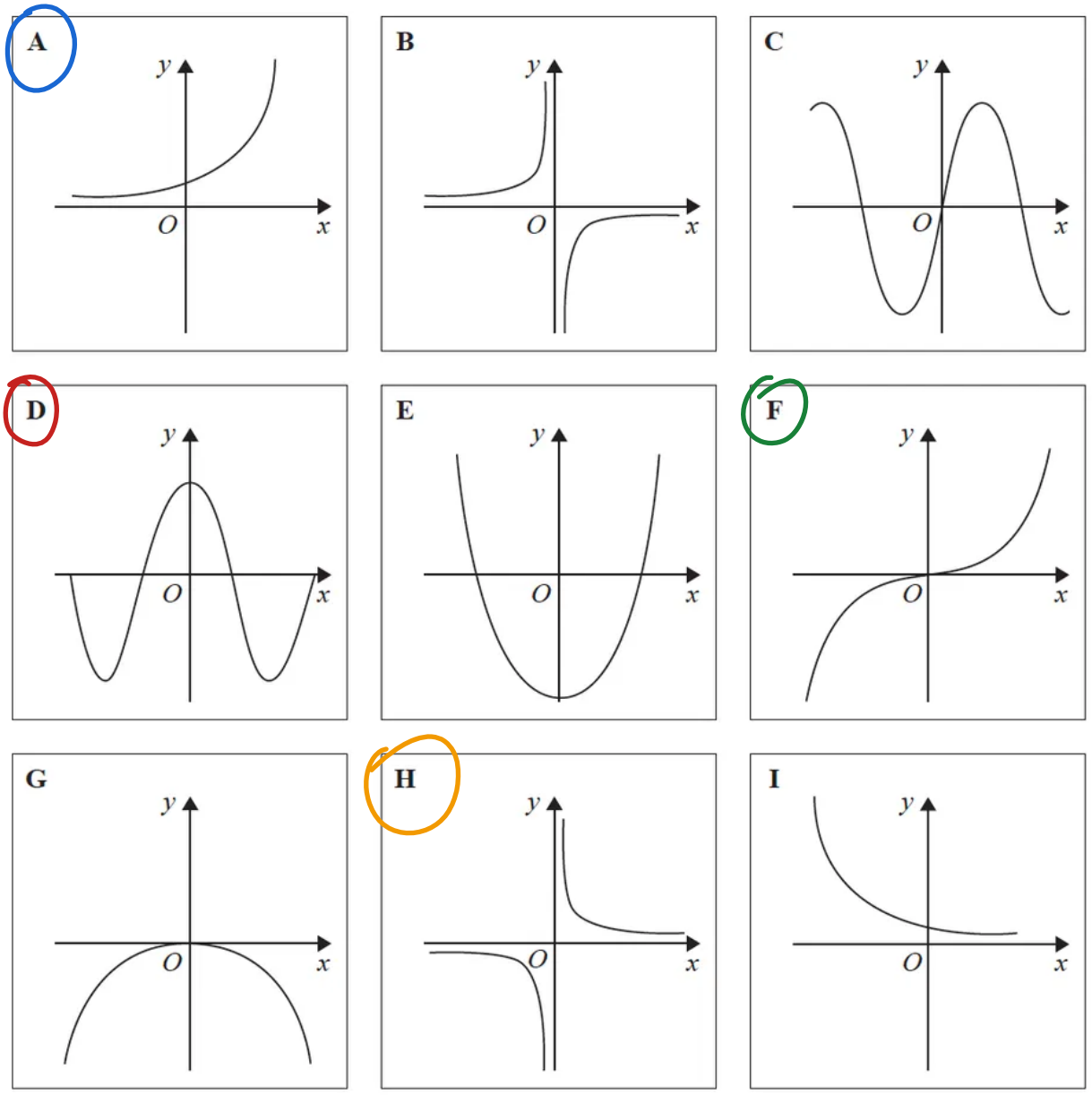



**(Total for Question 14 is 2 marks)**

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

**6**

Here are some graphs.




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

| Equation | Graph |
|---|---|
| $y = \sin x$ | D |
| $y = x^3 + 4x$ | F |
| $y = 2^x$ | A |
| $y = \frac{4}{x}$ | H |

**(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 $A$.

$x = 0$

$a^0 = 1$

( 0 , 1 )

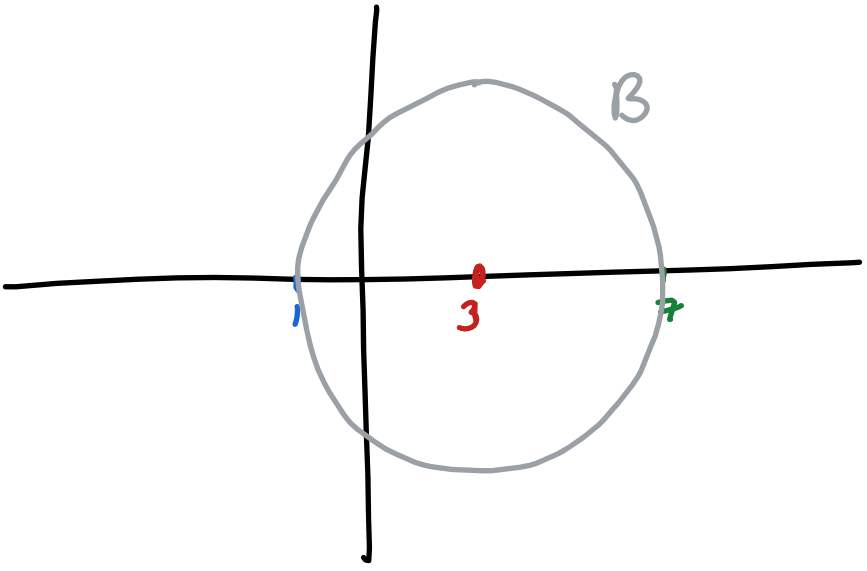
**(1)**

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.



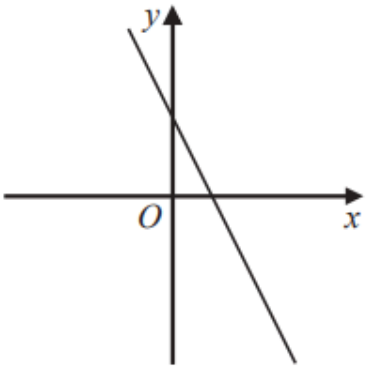

**(3)**

**(Total for Question 20 is 4 marks)**

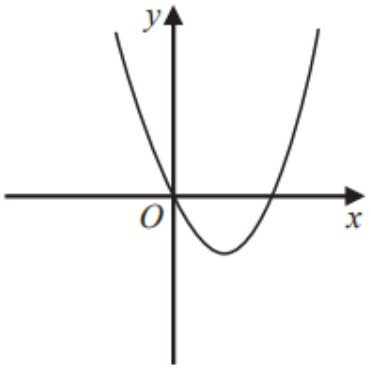
*[Edexcel, GCSE, Summer 2017, Paper 3H, Q20]*

**8**

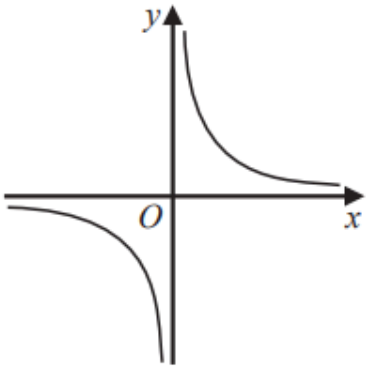
Here are five graphs.



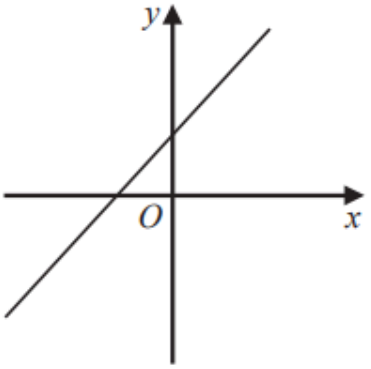

**A**



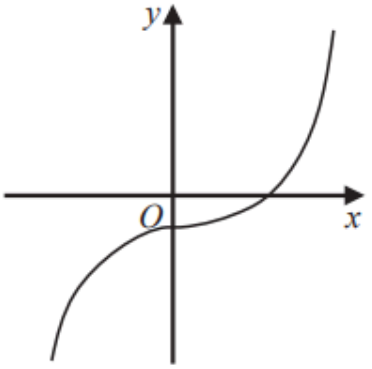

**B**




**C**




**D**




**E**

The table shows the equations of these graphs.

| Equation | Graph |
|---|---|
| $y = x^2 - 4x$ | B |
| $y = x + 3$ | D |
| $y = x^3 - 2$ | E |
| $y = \frac{1}{x}$ | C |
| $y = 5 - 2x$ | A |

Match the letter of each graph with its equation.

**(Total for Question 28 is 3 marks)**

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