

Name: _____

Level 2 Further Maths

Exponential Graphs



Corbettmaths

Ensure you have: Pencil or pen

Guidance

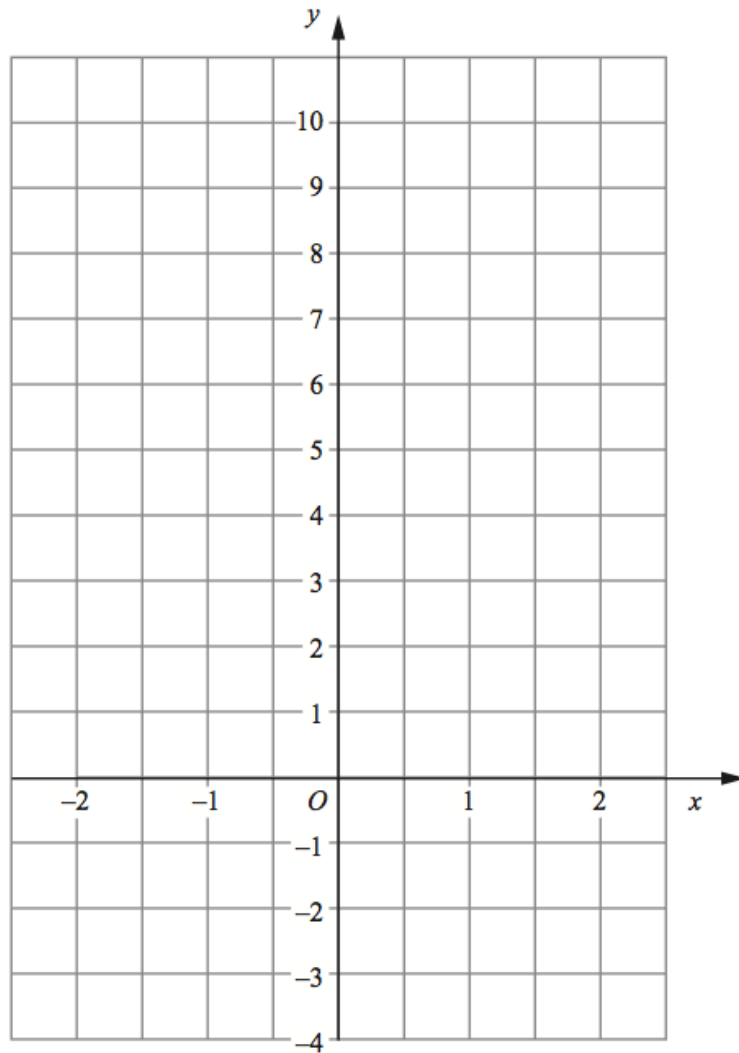
1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Revision for this topic

www.corbettmaths.com/more/further-maths/

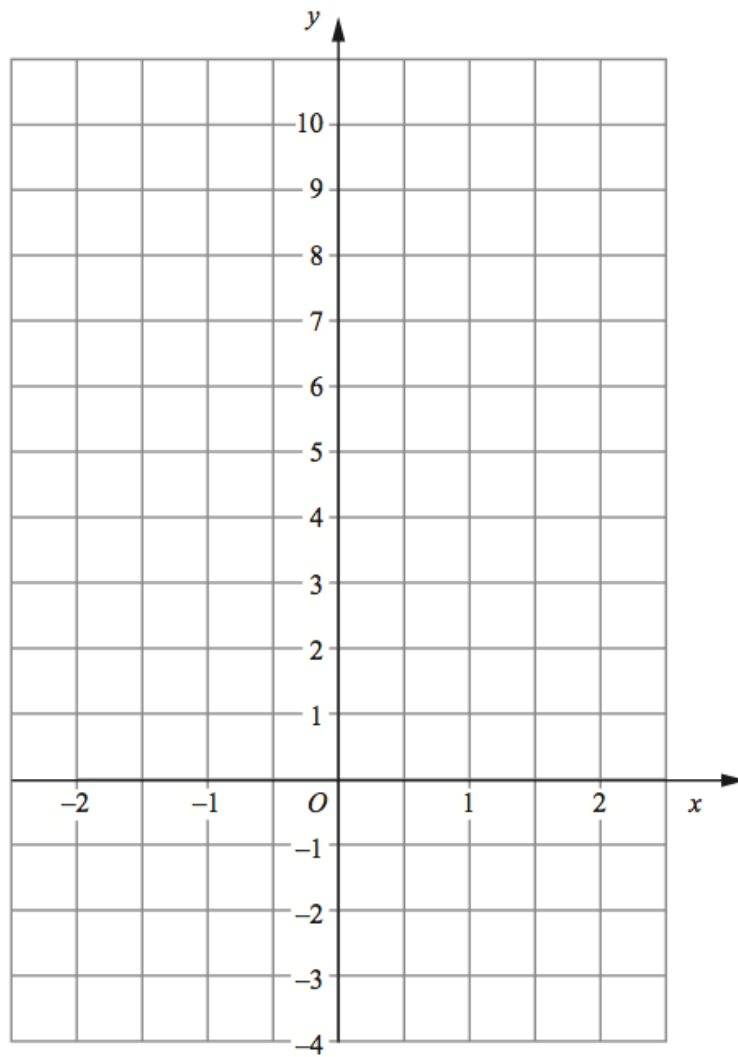


1. Draw the graph of $y = 3^x$ for values of x from -2 to 2



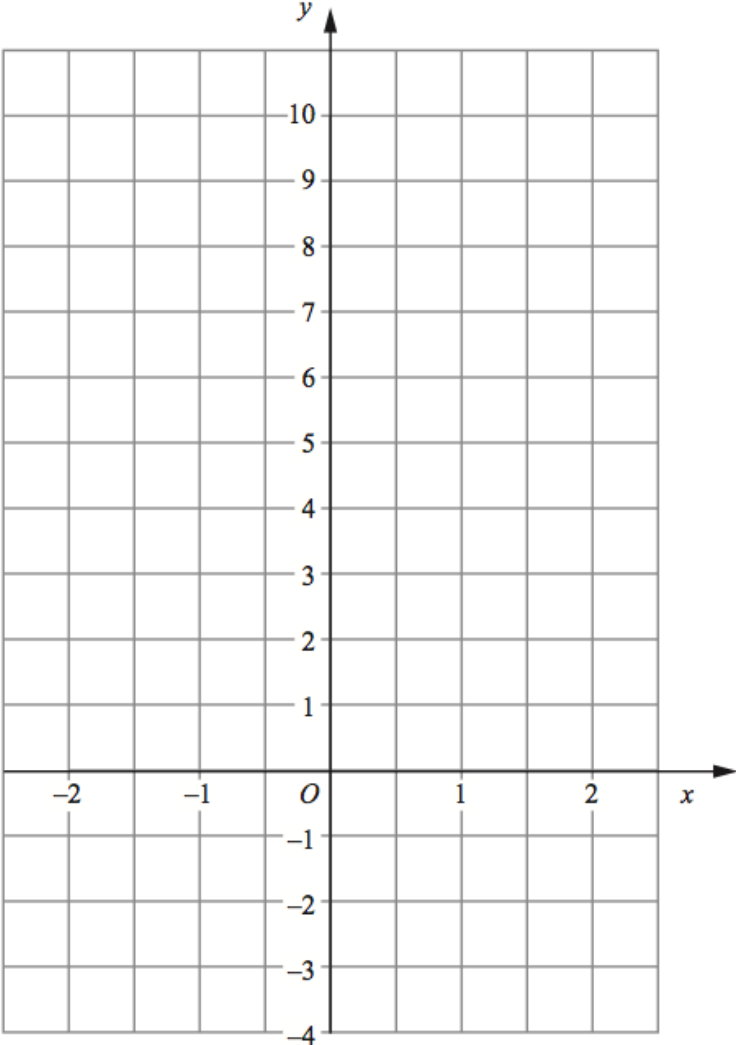
(2)

2. Draw the graph of $y = \left(\frac{1}{2}\right)^x$ for values of x from -2 to 2



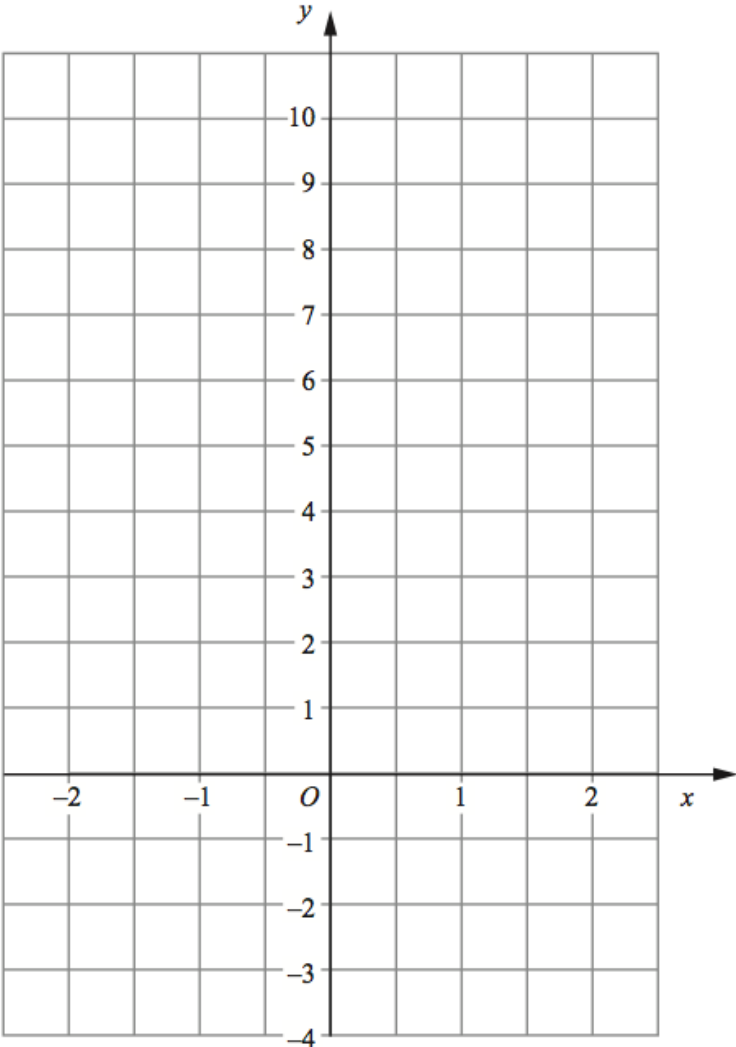
(2)

3. Draw the graph of $y = 2.5 \times 2^x$ for values of x from -2 to 2



(2)

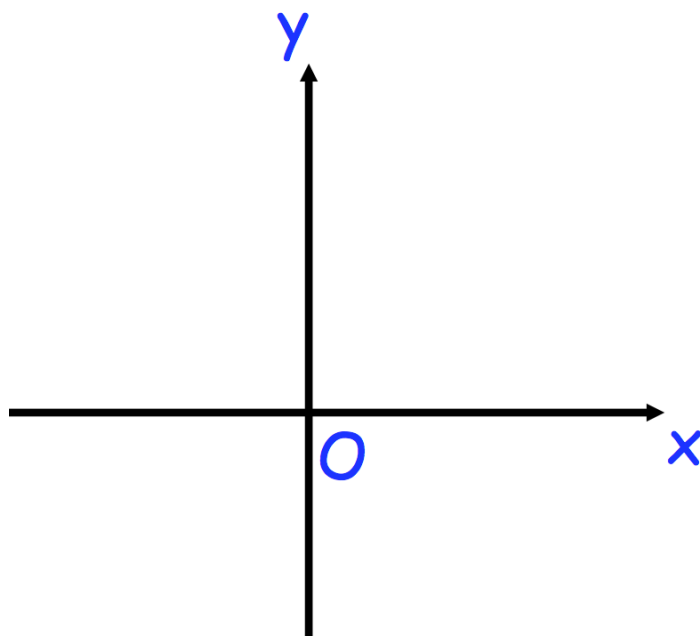
4. Draw the graph of $y = 3^{-x}$ for values of x from -2 to 2



(2)

5. Sketch the graph of $y = 100 \times 4^{-x}$

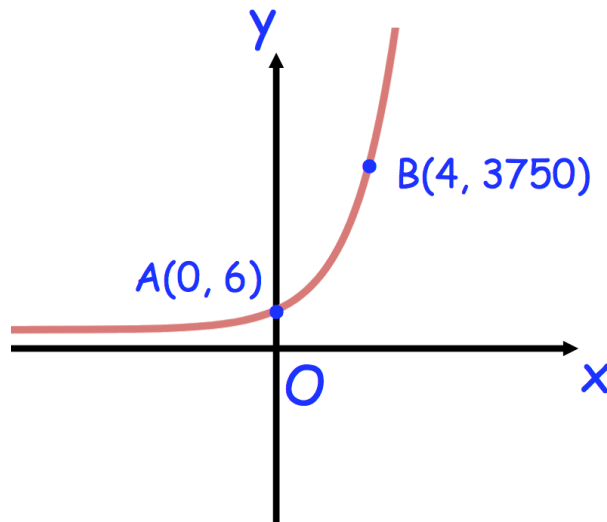
Label the coordinates of any points of intersection with the coordinate axes.



(2)

6. The sketch shows a curve with equation $y = ab^x$ where $a > 0$ and $b > 0$

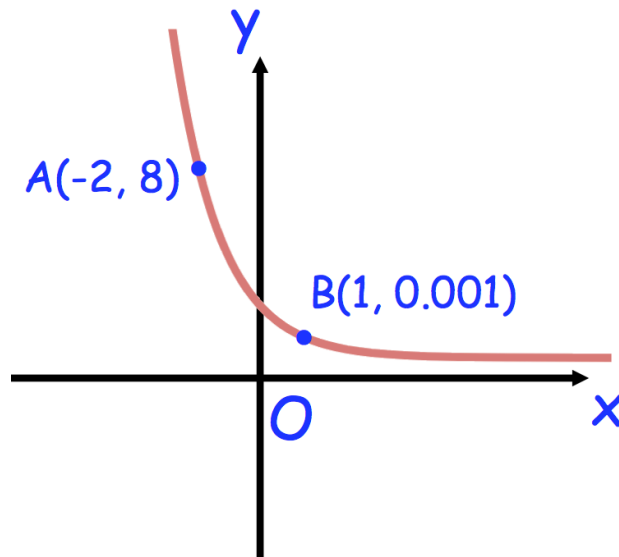
The curve passes through the points $(0, 6)$ and $(4, 3750)$



Calculate the value of a and b

.....
(3)

7. The sketch shows a curve with equation $y = ab^{-x}$ where $a > 0$ and $b > 0$

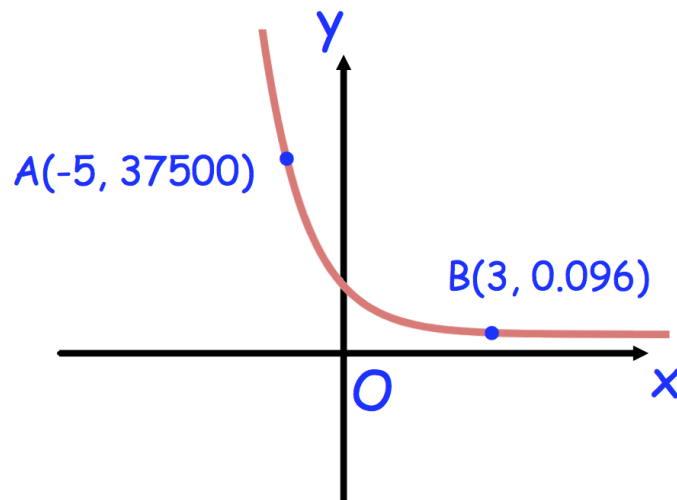


The curve passes through the points $(-2, 8)$ and $(1, 0.001)$

Calculate the value of a and b

.....
(4)

8. The sketch shows a curve with equation $y = ab^x$ where $a > 0$ and $b > 0$

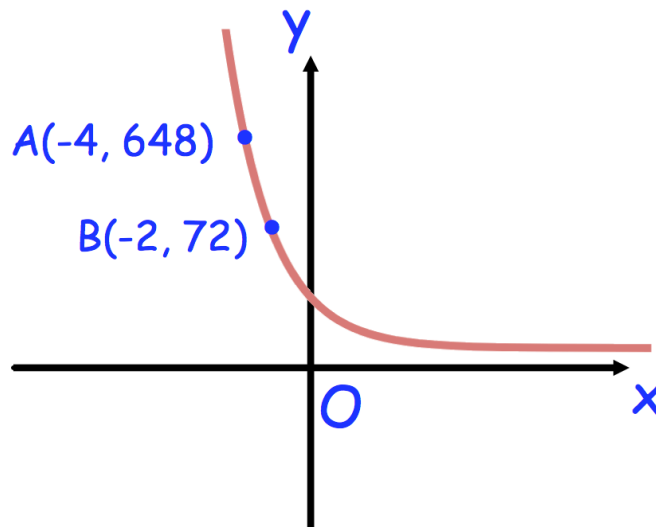


The curve passes through the points $(-5, 37500)$ and $(3, 0.096)$

Calculate the value of a and b

.....
(4)

9. The sketch shows a curve with equation $y = ab^{-x}$ where $a > 0$ and $b > 0$



The curve passes through the points $(-4, 648)$ and $(-2, 72)$

Calculate the value of a and b

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(4)

10. A scientist is carrying out an experiment to remove microplastics from water. In an experiment 20,000 microplastics are added to a sample of water.

The number of microplastics, M , after t minutes is $M = 20000 \times 2^{-t}$

- (a) Calculate the number of microplastics in the water after 3 minutes.

.....
(2)

- (b) After how many complete minutes does it take for the number of microplastics to fall below 100?

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(2)