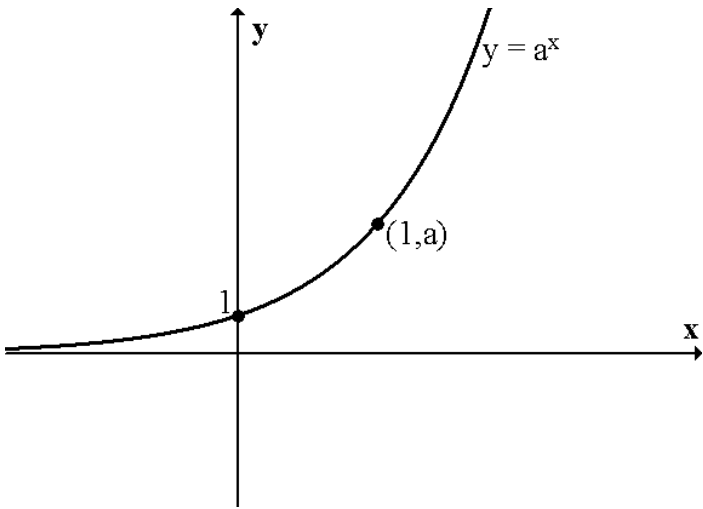
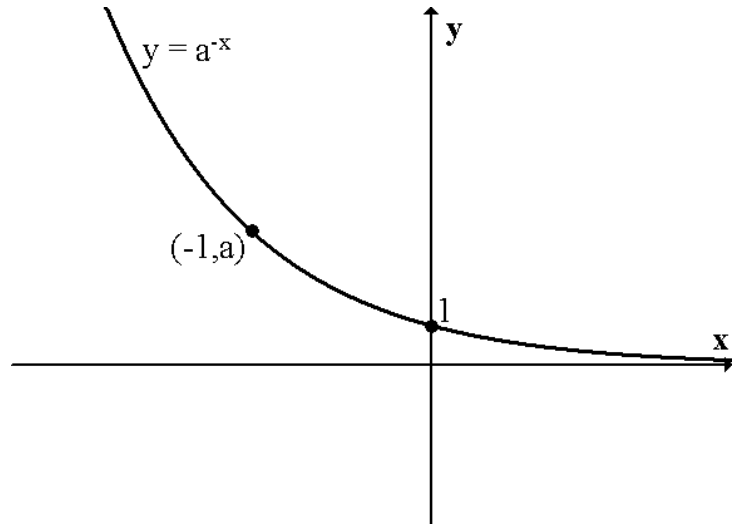


Exponential Graphs

$$y = a^x$$

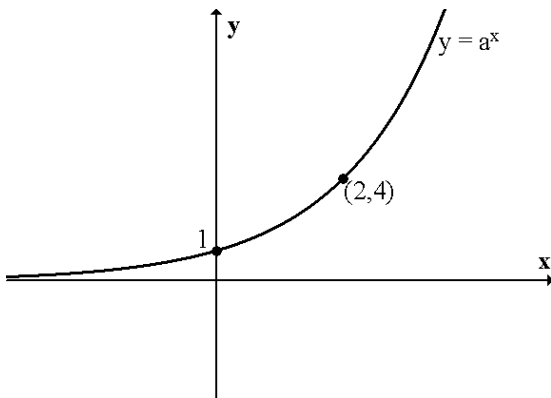


$$y = a^{-x}$$

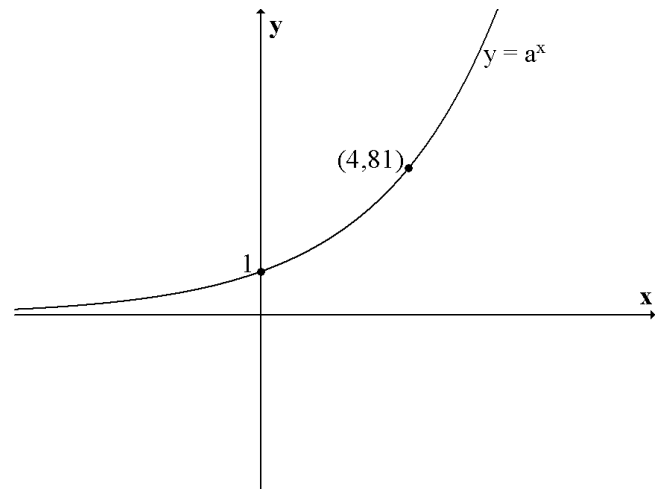


1. Find the value of a in each of the following

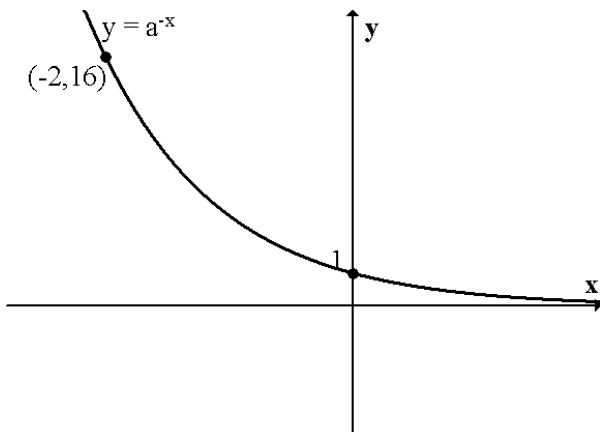
(a)



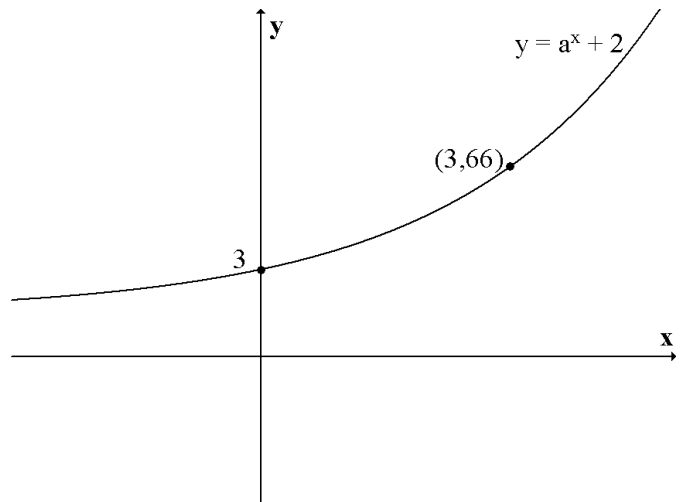
(b)

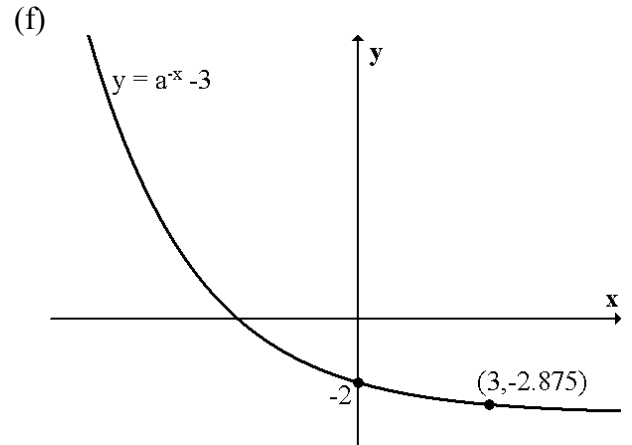
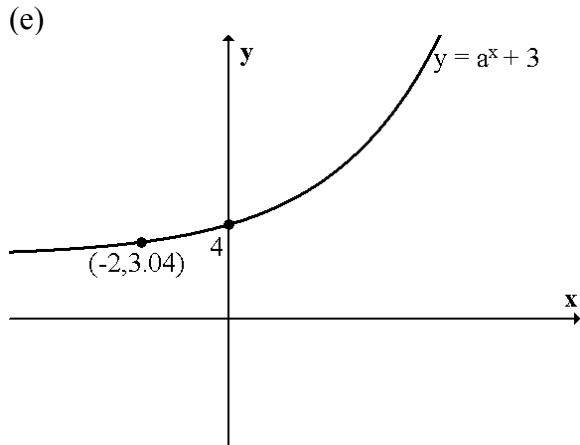


(c)

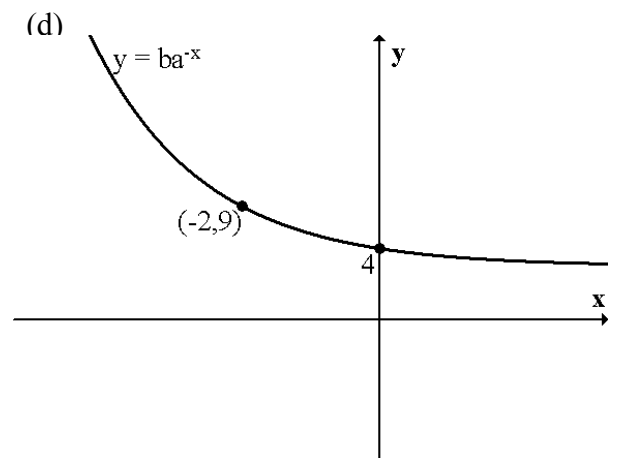
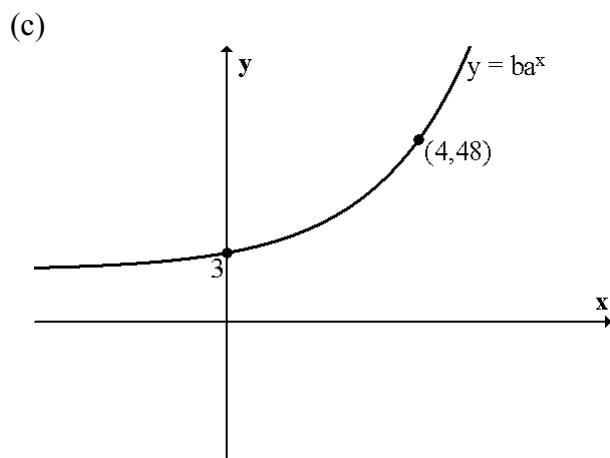
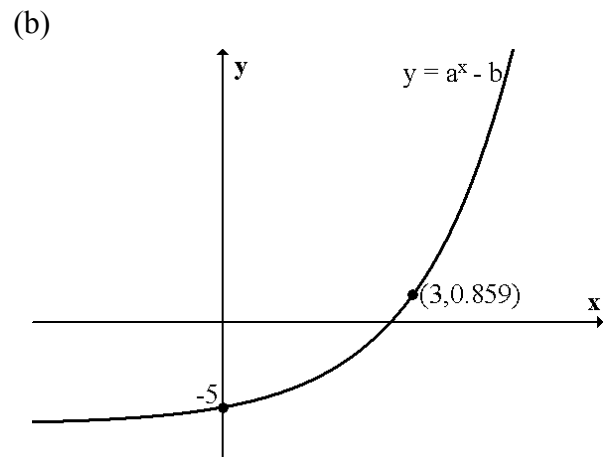
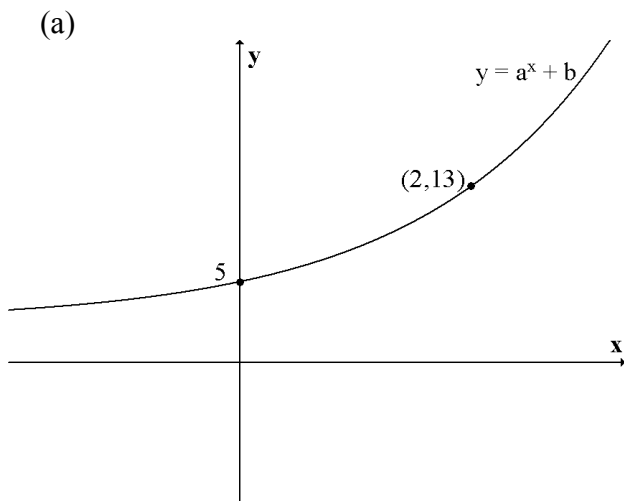


(d)





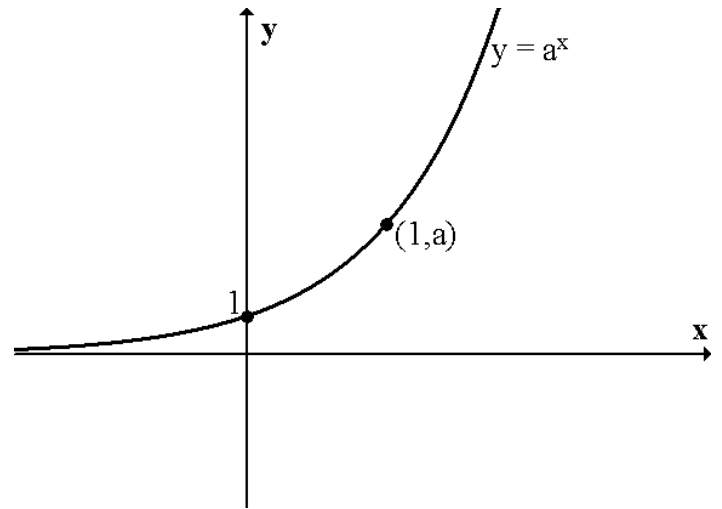
2. Find the values of a and b in the following



3. The diagram opposite shows the graph of $y = a^x$.

On separate diagrams sketch the graphs of

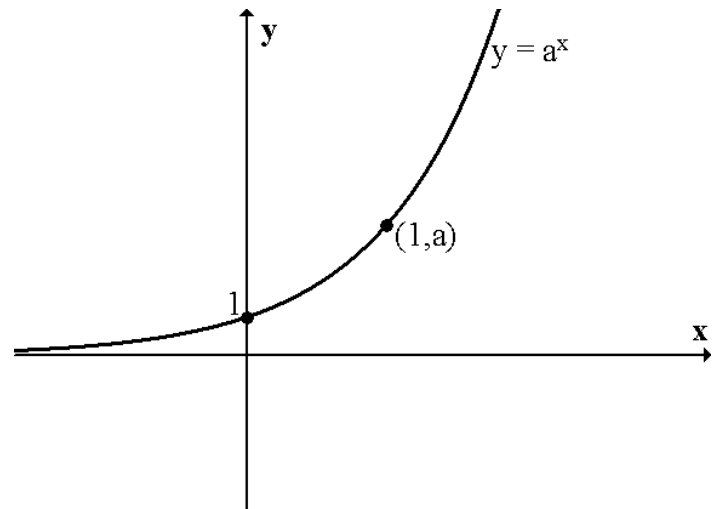
- (a) $y = a^x + 2$
- (b) $y = a^x - 1$
- (c) $y = -a^x$
- (d) $y = 3a^x$



4. The diagram opposite shows the graph of $y = a^x$.

On separate diagrams sketch the graphs of

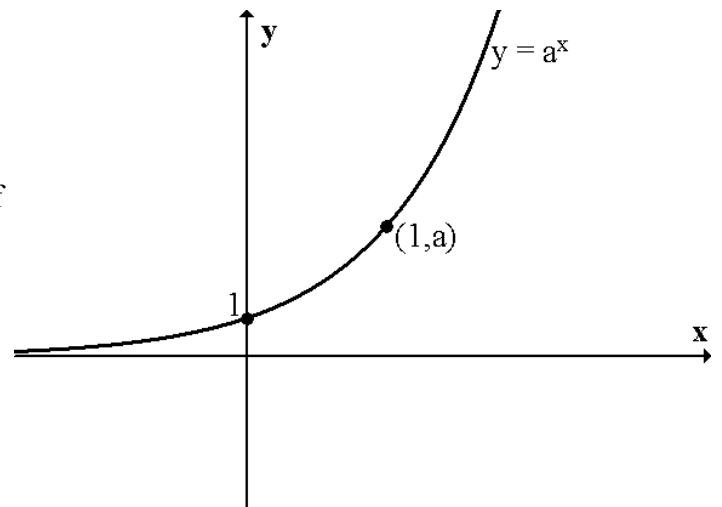
- (a) $y = a^{x+1}$
- (b) $y = a^{-x}$
- (c) $y = a^{-x} + 2$
- (d) $y = a^{1-x}$



5. The diagram opposite shows the graph of $y = a^x$.

On a separate diagrams show the graphs of

- (a) $y = -a^{-x}$
- (b) $y = 4 - a^{-x}$



6. Show that the x-coordinate of the point of intersection of the graphs $y = a^x + 1$ and $y = a^{x+1}$ is $x = \log_a \left(\frac{1}{a-1} \right)$

7. Show that the x-coordinate of the point of intersection of the graphs $y = a^x - 2$ and $y = a^{x-1}$ is $x = \log_a \left(\frac{2a}{a-1} \right)$