Drawing exponential graphs

Mana Maths

Te reo Māori terms

kauwhata
graph
Open in Te Aka

whārite
equation
Open in Te Aka

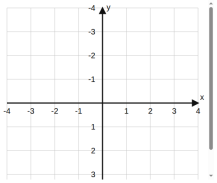
tepe kōpiko
asymptote
Open in Te Aka

tēpara
table
Open in Te Aka

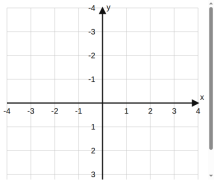
Drawing exponential graphs — Foundation

Plot a few points, then draw the smooth exponential curve.

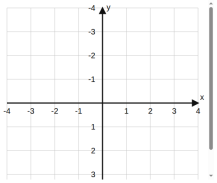
1. Draw $y = 2^x$.



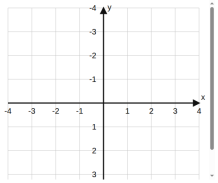
2. Draw $y = 3^x$.



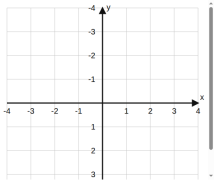
3. Draw $y = 4^x$.



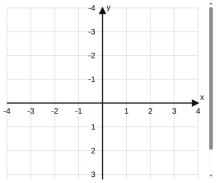
4. Draw $y = 2^x + 1$.



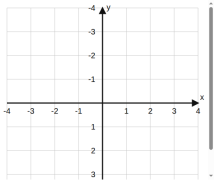
5. Draw $y = 2^x - 2$.



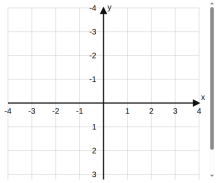
6. Draw $y = 3^x + 2$.



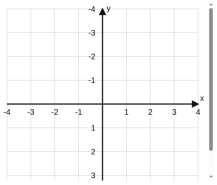
7. Draw $y = \left(\frac{1}{2}\right)^x$.



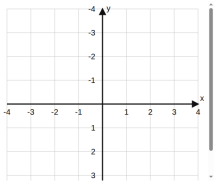
8. Draw $y = \left(\frac{1}{3}\right)^x$.



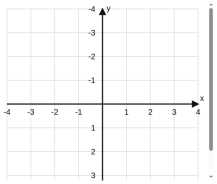
9. Draw $y = 5\left(\frac{1}{2}\right)^x$.



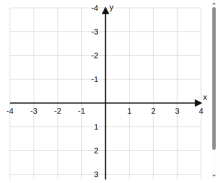
10. Draw $y = 2 \cdot 2^x$.



11. Draw $y = 3 \cdot 2^x$.



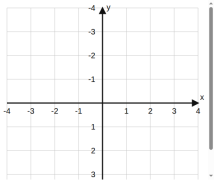
12. Draw $y = \frac{1}{2} \cdot 4^x$.



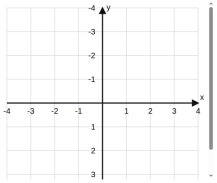
Drawing exponential graphs — Proficient

Use a sensible table of values. Mark the y-intercept before sketching the curve.

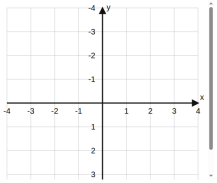
1. Draw $y = 2^{x-1}$.



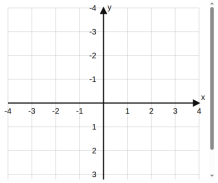
2. Draw $y = 3^{x-1}$.



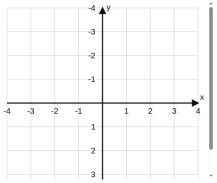
3. Draw $y = 2^{x+2}$.



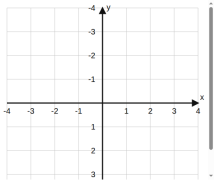
4. Draw $y = 2^{x} + 3$.



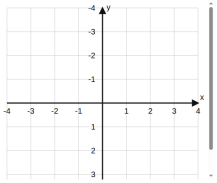
5. Draw $y = 2^{x} - 4$.



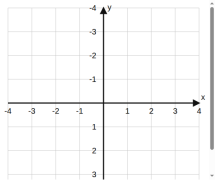
6. Draw $y = 3 \cdot 2^{x} + 1$.



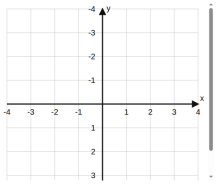
7. Draw $y = 4\left(\frac{1}{2}\right)^{x}$.



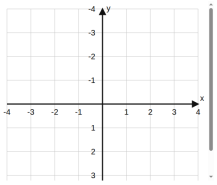
8. Draw $y = 6\left(\frac{1}{3}\right)^{x}$.



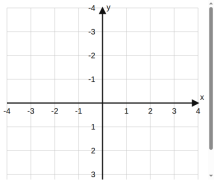
9. Draw $y = 2\left(\frac{1}{2}\right)^x - 1$



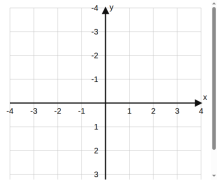
10. Draw $y = 5\left(\frac{1}{2}\right)^x + 1$



11. Draw $y = \frac{1}{4} \cdot 2^x$.



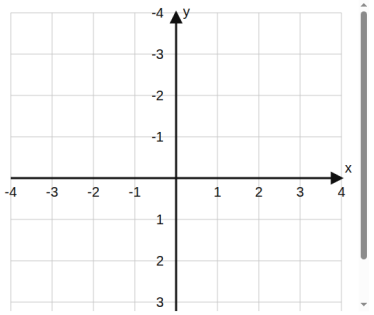
12. Draw $y = 2 \cdot 3^x - 2$.



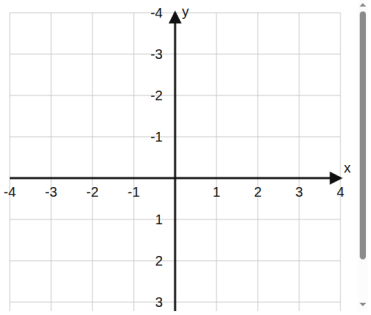
Drawing exponential graphs — Excellence

Sketch each graph carefully. Mark the horizontal asymptote when asked.

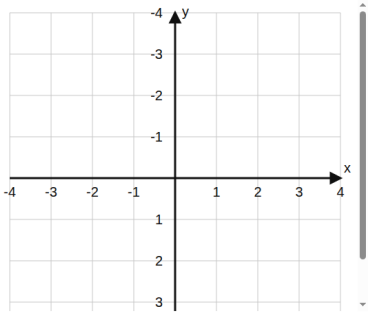
1. Draw $y = 2^x + 4$. Mark the horizontal asymptote.



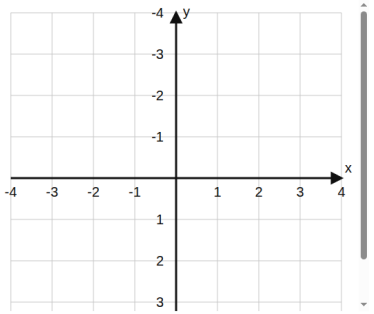
2. Draw $y = 3^x - 5$. Mark the horizontal asymptote.



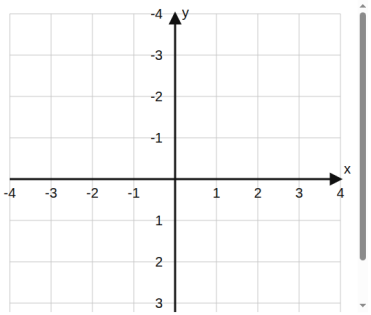
3. Draw $y = 2^{x-2} + 1$. Mark the horizontal asymptote.



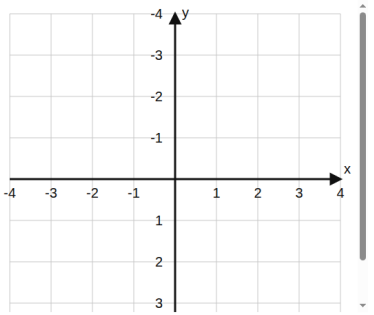
4. Draw $y = 2^{x+1} - 3$. Mark the horizontal asymptote.



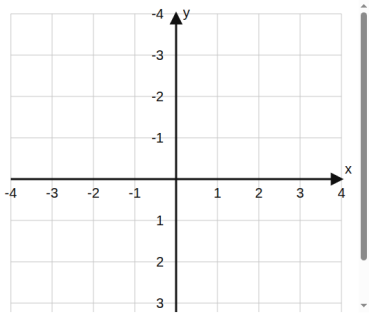
5. Draw $y = 4\left(\frac{1}{2}\right)^x + 1$. Mark the horizontal asymptote.



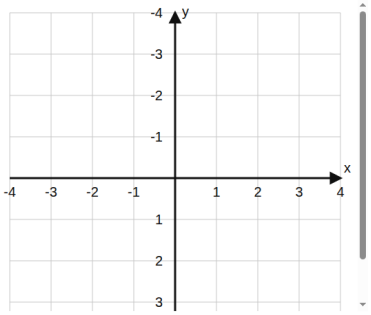
6. Draw $y = 3\left(\frac{1}{3}\right)^x - 2$. Mark the horizontal asymptote.



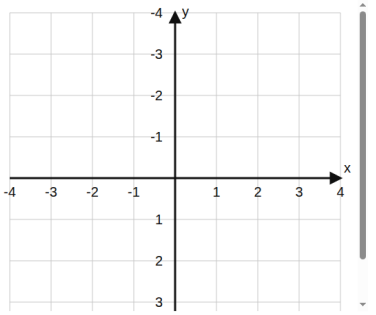
7. Draw $y = 2 \cdot 2^x - 1$.
Mark the horizontal asymptote.



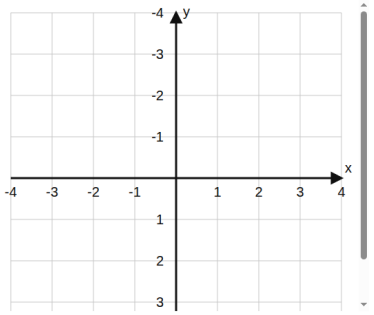
8. Draw $y = \frac{1}{2} \cdot 3^x + 2$.
Mark the horizontal asymptote.



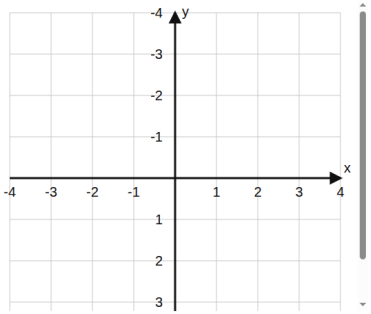
9. Draw $y = 5\left(\frac{1}{2}\right)^{x-1}$.
State whether the graph is growth or decay.



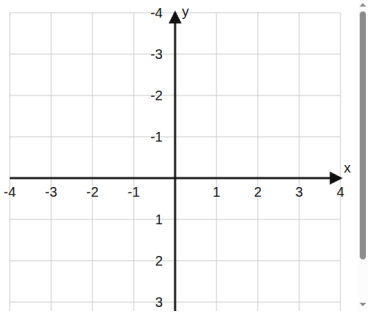
10. Draw $y = 2\left(\frac{1}{3}\right)^{x+1} + 1$. State whether the graph is growth or decay.



11. Draw $y = 3^{x-1} - 4$. Mark the horizontal asymptote and the y-intercept.

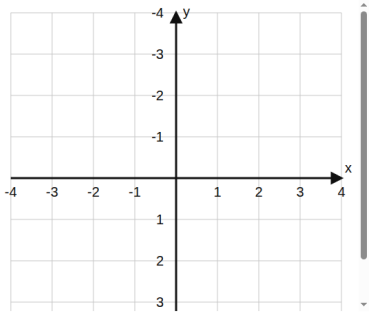


12. Draw $y = 2^{x+2} + 2$. Mark the horizontal asymptote and the y-intercept.



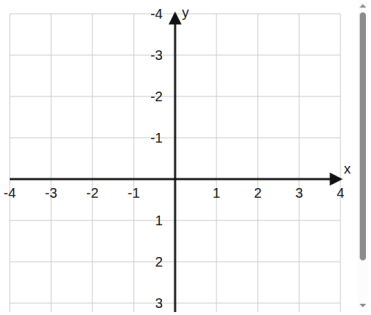
13. Draw $y = 6\left(\frac{1}{2}\right)^x - 3$.

Mark the horizontal asymptote and the y-intercept.



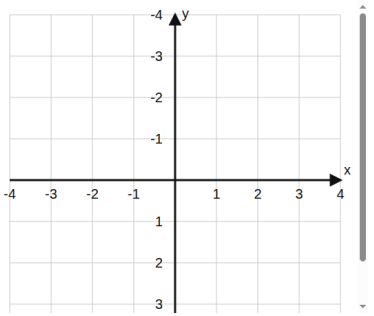
14. Draw $y = 2 \cdot 4^x + 1$.

Mark the horizontal asymptote and the y-intercept.



15. Draw $y = \frac{1}{4} \cdot 2^x - 2$.

Mark the horizontal asymptote and the y-intercept.



16. Draw $y = 4\left(\frac{1}{2}\right)^x + 3$.

Mark the horizontal asymptote and the y-intercept.