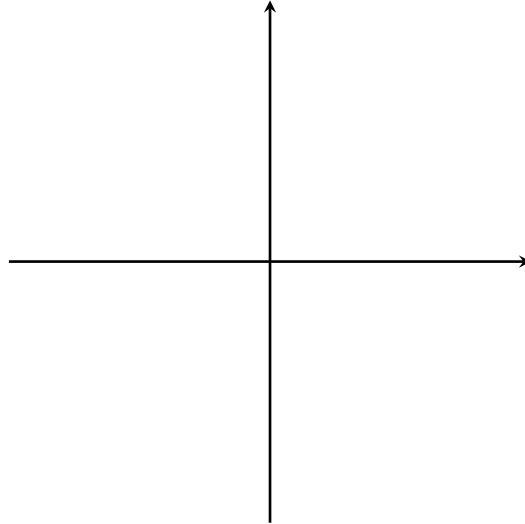
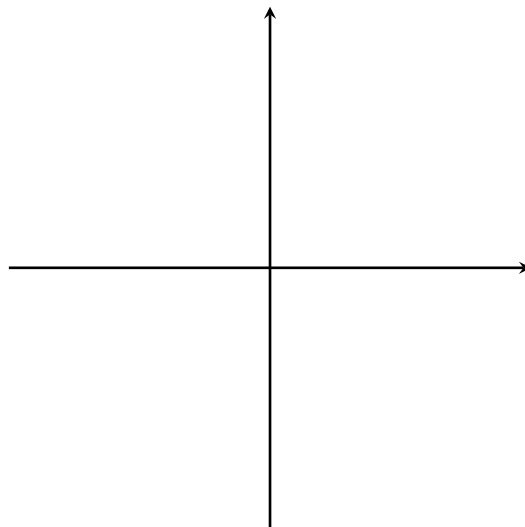


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4. Graph the function $y = 2^x$ including any asymptotes (using technology if you want, but eventually you'll need to do it without technology). What is the range?



5. Graph the function $y = 3 \cdot 2^x - 4$ including any asymptotes. What is the range?



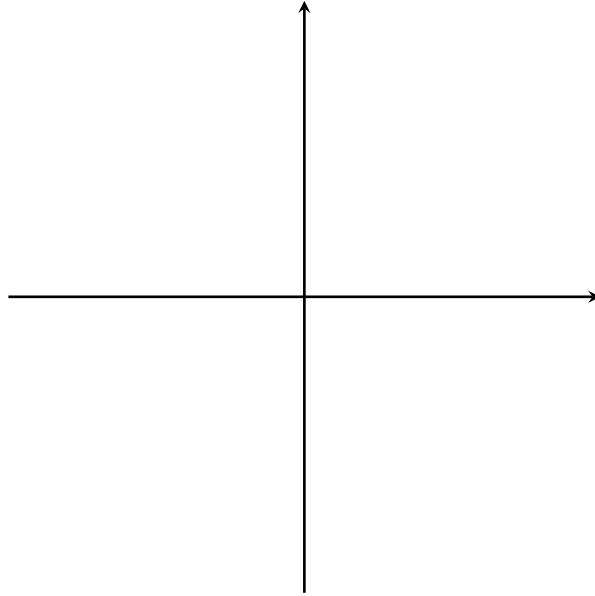
6. Change the function $y = 3 \cdot 2^x - 4$ so that the range is $(-\infty, -4)$.

7. Find the domain and range of the function $y = -\frac{1}{2} \cdot 3^x + 1$.

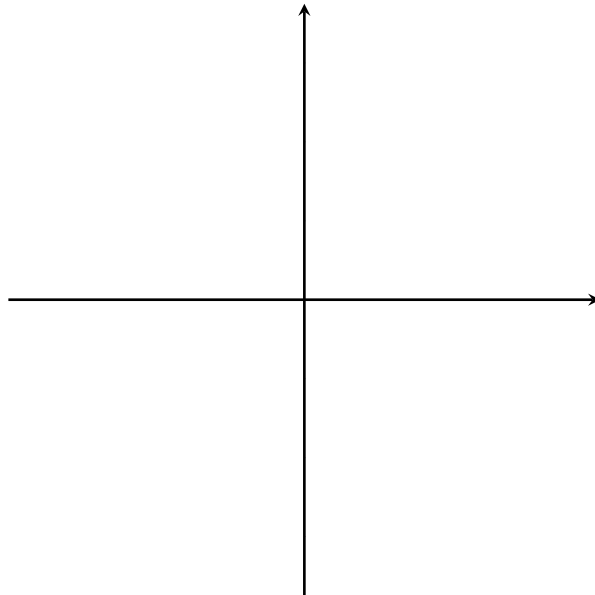
8. Find the domain and range of the function $y = 2 \left(\frac{1}{5}\right)^x - 1$.

9. Use function transformations with the parent function $y = 2^x$ to sketch the graphs of the following functions.

(a) Sketch $y = 2^x$ and $y = 4 \cdot 2^x$ on the same axes. What transformation is this?



(b) Sketch $y = 2^x$ and $y = 2^{x+2}$ on the same axes. What transformation is this?



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10. Sketch the graph of $y = -2\left(\frac{1}{3}\right)^x - 3$ and sketch the parent function and any intermediate functions also.

