1. Use the Laws of Exponents to rewrite and simplify. Write down the rules that you are using to the side of your work.

   a. $\sqrt[3]{x^{-2}}$

   b. $b^{(n-1)}(3b^2)^n$

   c. $\frac{6x^2y}{\sqrt{4xy^3}}$

2. Are the following statements true or false? If the statement is false, provide a counterexample (using specific numbers) showing it is false.

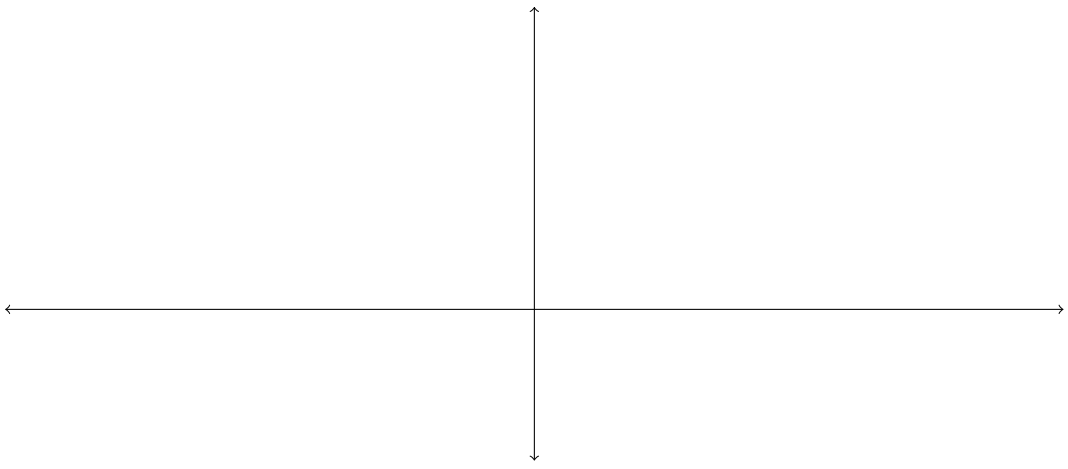
   a. $(a+b)^2 = a^2 + b^2$

   b. $\sqrt{x^2+4} = x+2$

   c. $\dfrac{a+b}{c+d} = \dfrac{a}{c} + \dfrac{b}{d}$

   d. $\dfrac{a+b}{c} = \dfrac{a}{c} + \dfrac{b}{c}$

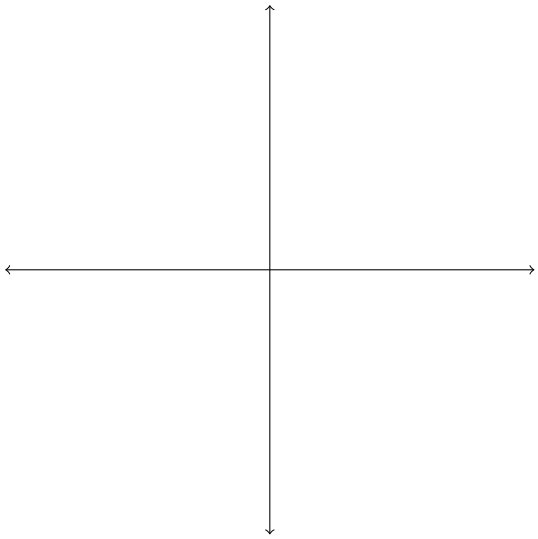
3. On the axes below, graph $f(x) = 2^x$, $g(x) = e^x$, and $k(x) = \left(\frac{1}{2}\right)^x$. Label any x- and y-intercepts.



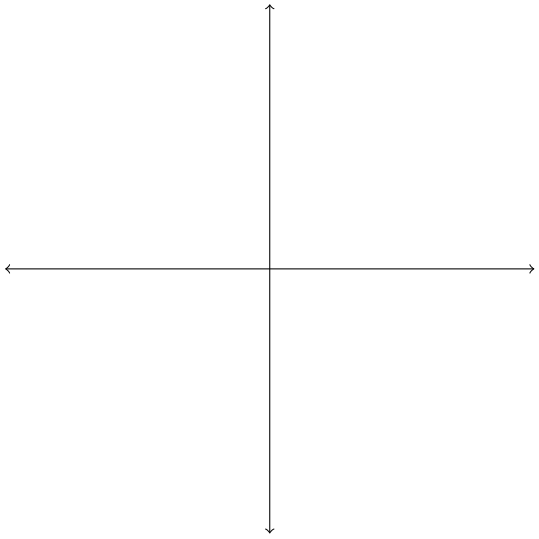
4. What is the domain and range of $f(x) = 2^x$? Asymptotes?

5. Sketch the graph of each function below, using what you know about transformations of functions. Determine its domain and range, and label any x- and y-intercepts (use exact numbers) and horizontal or vertical asymptotes.

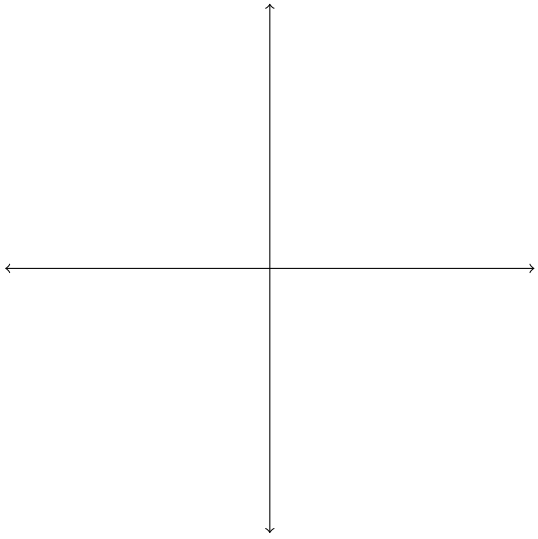
(a) $f(x) = e^x$



(c) $f(x) = e^{x-2}$



(b) $f(x) = 2e^{x-2}$



(d) $f(x) = 1 + 2e^{x-2}$