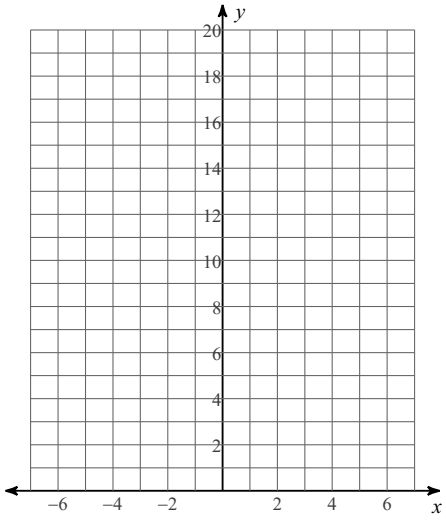
Algebra 1 Name_____

HW42: Transformations of Exponentials

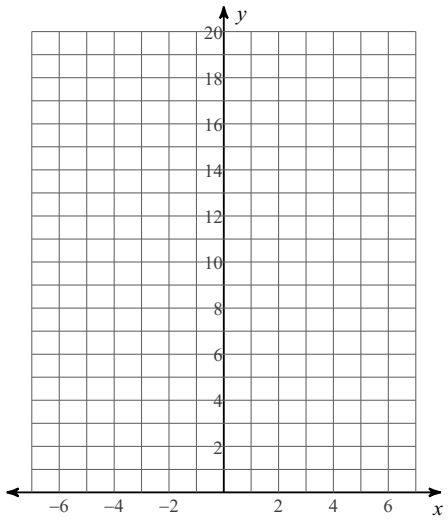
Date_____ Period____

Identify the function as exponential growth or exponential decay. Identify the domain, the range, and the horizontal asymptote. Then create a table and sketch the graph of each function.

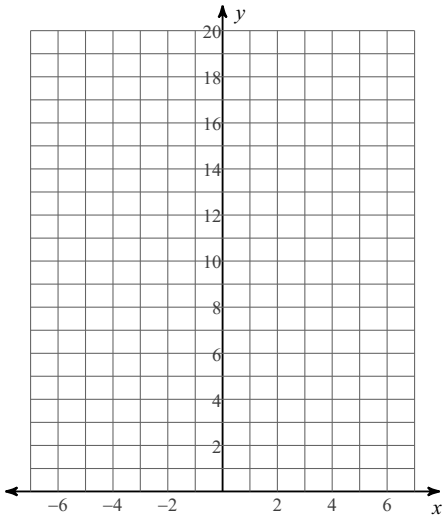
1) $f(x) = 4 \cdot 2^x$



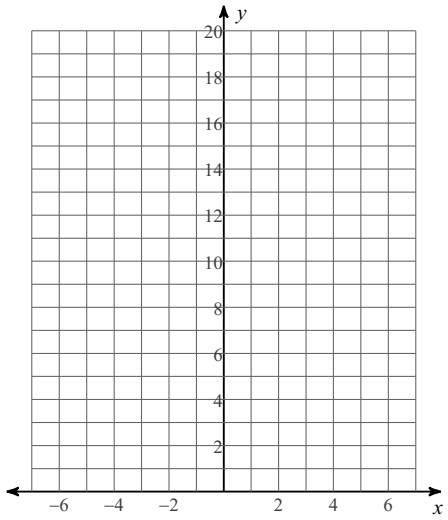
2) $f(x) = \frac{1}{4} \cdot \left(\frac{1}{2}\right)^x$



3) $f(x) = \frac{1}{3} \cdot 3^x$

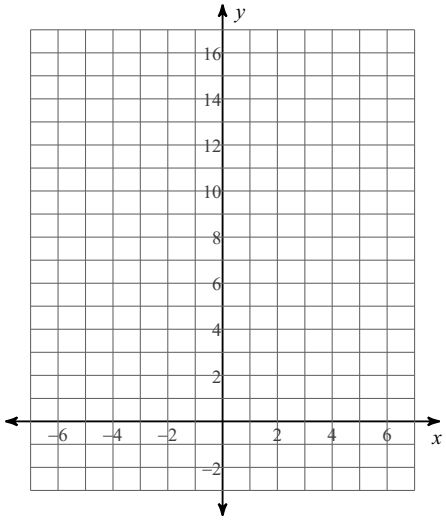


4) $f(x) = 4 \cdot \left(\frac{1}{2}\right)^x$

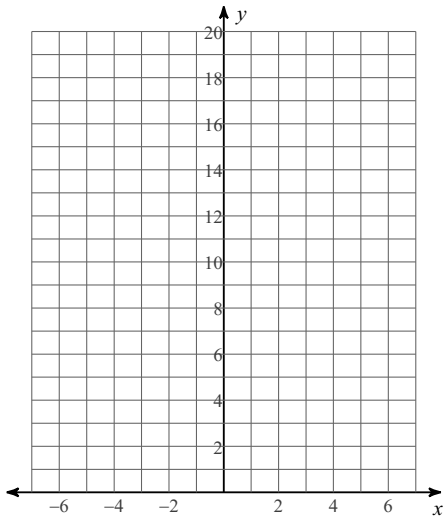


Identify the function as exponential growth or exponential decay. Identify the transformation, the domain, the range, and the horizontal asymptote. Create a table and sketch the graph of each function.

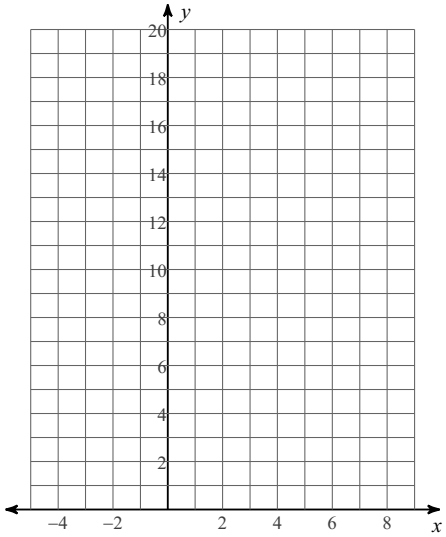
5) $f(x) = 5 \cdot 2^x - 2$



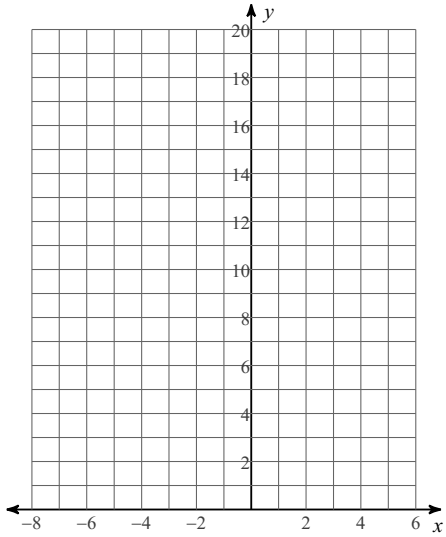
6) $f(x) = 4 \cdot \left(\frac{1}{2}\right)^x + 1$



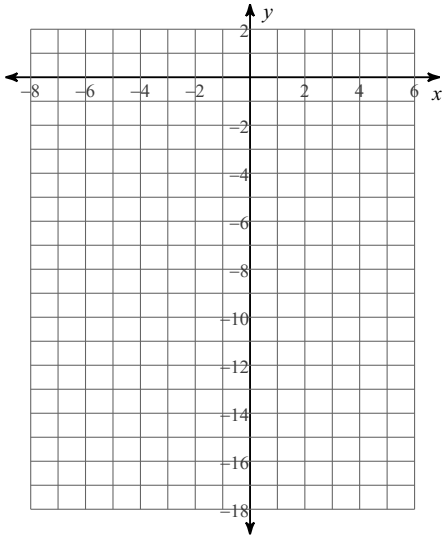
7) $f(x) = 2 \cdot \left(\frac{1}{2}\right)^{x-2}$



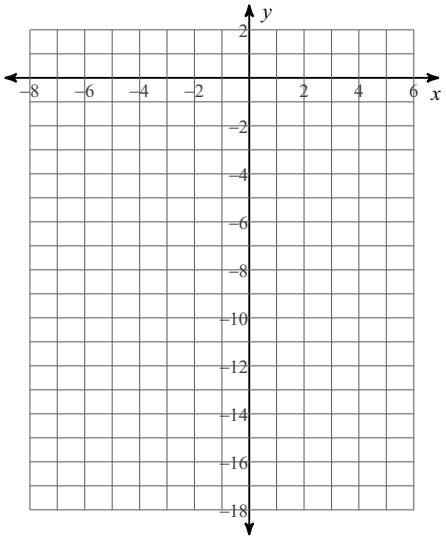
8) $f(x) = 2 \cdot \left(\frac{1}{3}\right)^{x+1}$



9) $f(x) = -3 \cdot 2^x + 1$



10) $f(x) = -4 \cdot \left(\frac{1}{2}\right)^x$



Simplify. Your answer should contain only positive exponents.

11) $3m^0 \cdot 4m^2 \cdot m$

12) $5x^4 \cdot x^5$

13) $\left(3r^2\right)^6$

14) $\left(5m^{-1}\right)^3$

15) $\frac{2n^{-6}}{5n^6}$

16) $\frac{2a}{6a^{-2}}$

Simplify.

17) $5\sqrt{45a^2}$

18) $2\sqrt{320x^4}$

19) $\sqrt{8n} \cdot 3\sqrt{2n^3}$

20) $\sqrt{2n^3} \cdot 4\sqrt{2n^3}$

21) $\frac{2\sqrt{5n^4}}{3\sqrt{15n}}$

22) $\frac{\sqrt{12x^3y}}{3\sqrt{20x^3y^3}}$