Algebra 2 Name_____

# Graphing Exponential Functions

**Does the function represent growth or decay? Why?**

1) $y = 3 \cdot 2^x$

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

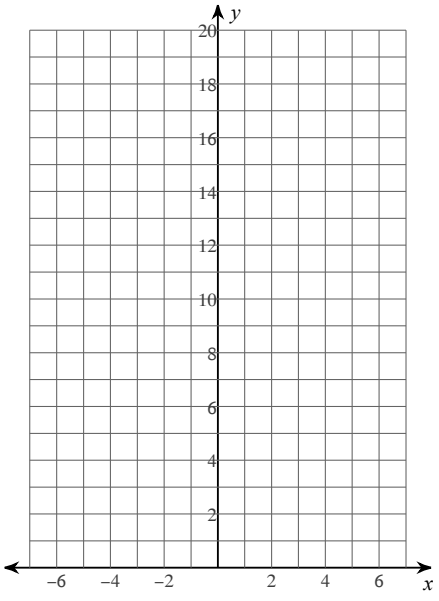
3) $y = \frac{1}{2} \cdot \left(\frac{1}{5}\right)^x$

4) $y = 2 \cdot 2^x$

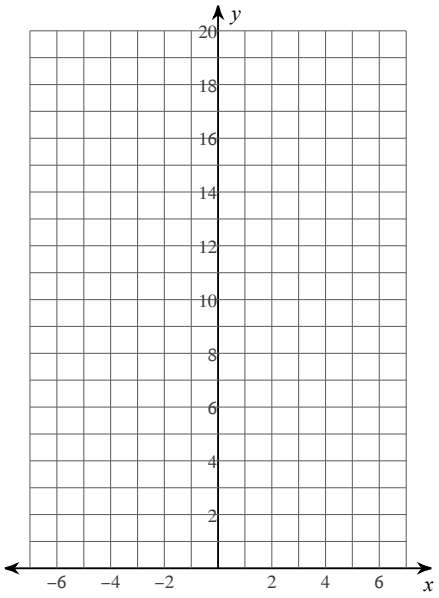
**To sketch the graph of each function., find the starting points (0, a) and (1, ab). Use the transformation rules to move the "starting points". Be sure to connect the points in the correct direction. Draw and label the asymptote. State the domain and range.**

$\boldsymbol{y = ab^{x-h} + k}$

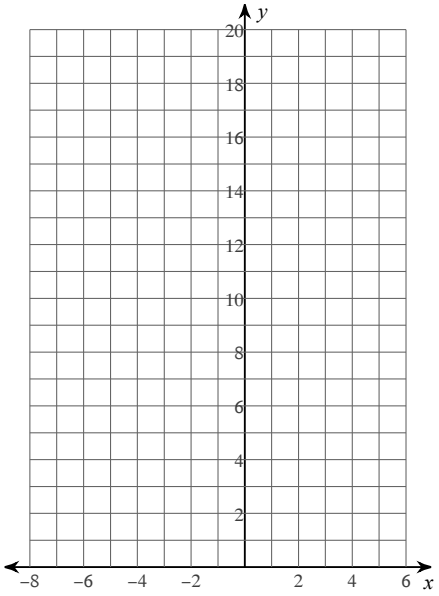
5) $y = 2 \cdot 2^x$



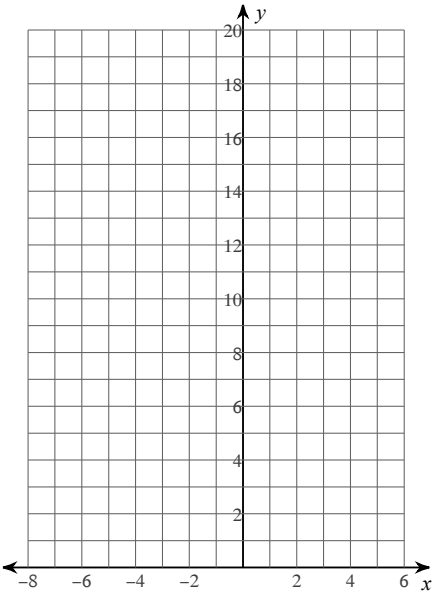

6) $y = 3 \cdot \left(\frac{1}{2}\right)^x$



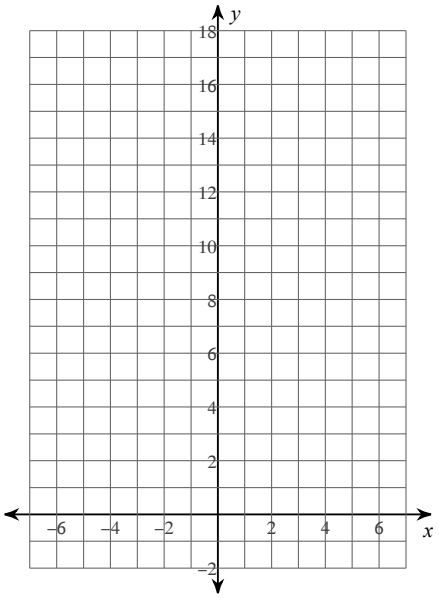
7) $y = 5 \cdot \left(\frac{1}{2}\right)^{x+1}$



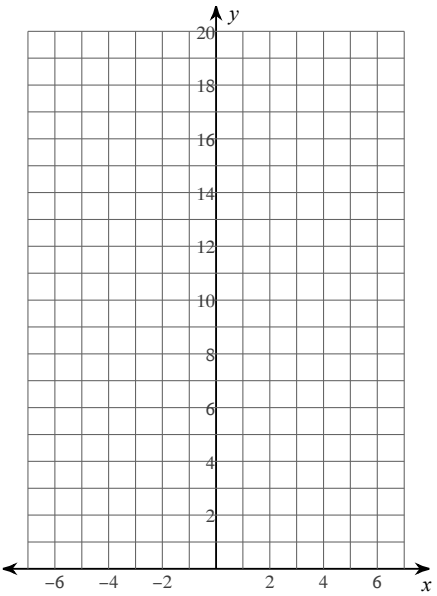

8) $y = 3 \cdot 2^{x+1}$



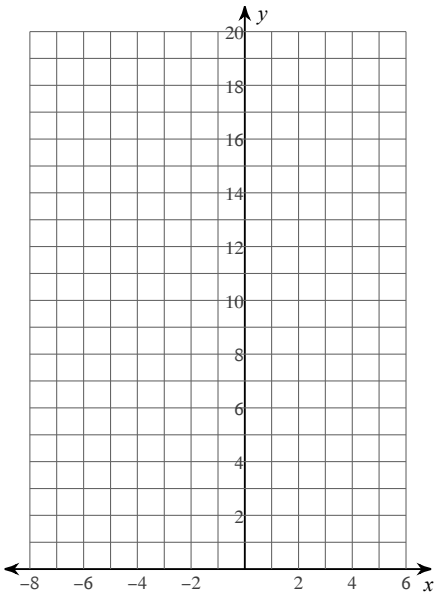

9) $y = 2 \cdot \left(\frac{1}{3}\right)^{x} - 2$



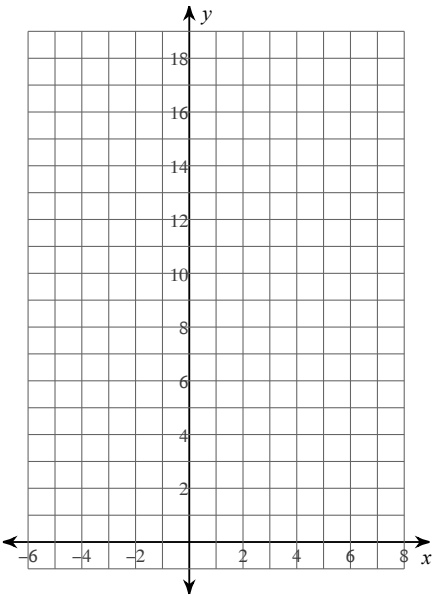

10) $y = 2 \cdot 3^{x} + 1$



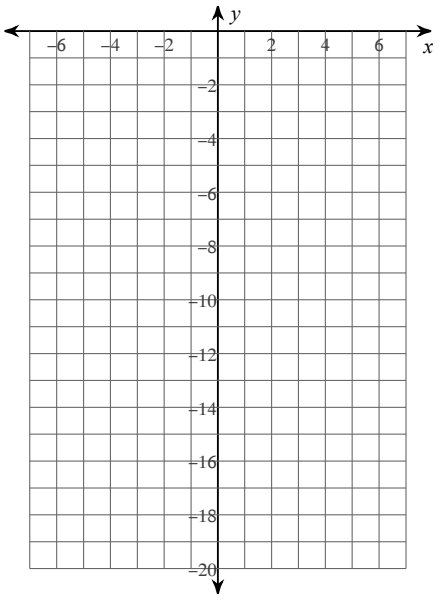
11) $y = \frac{1}{2} \cdot \left(\frac{1}{4}\right)^{x+1} + 1$




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




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




14) $y = -2 \cdot 2^{x}$