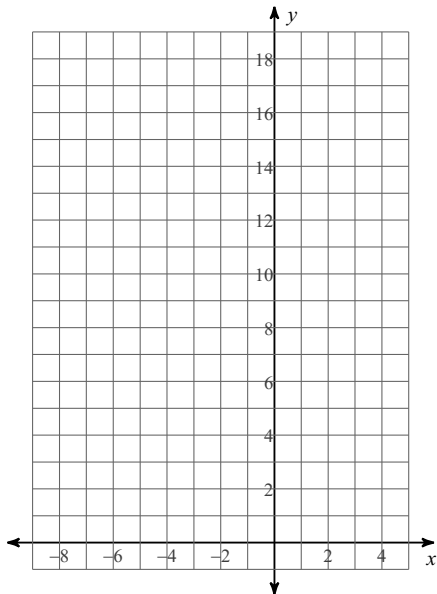


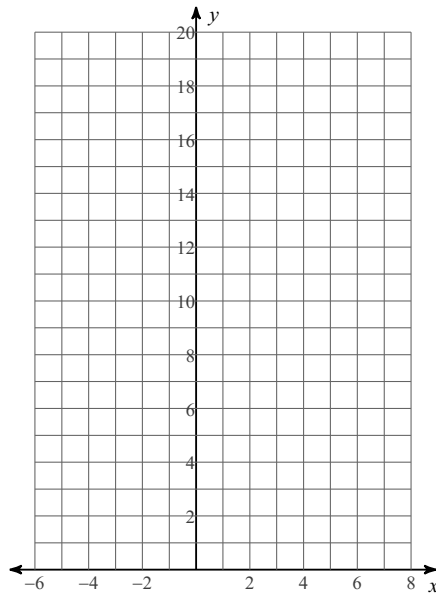
# HW 4-3 Graphing Exponential Functions

**1) Sketch the graph of each function using transformations of points and the horizontal asymptote. 2) Write the equation for the asymptote.**

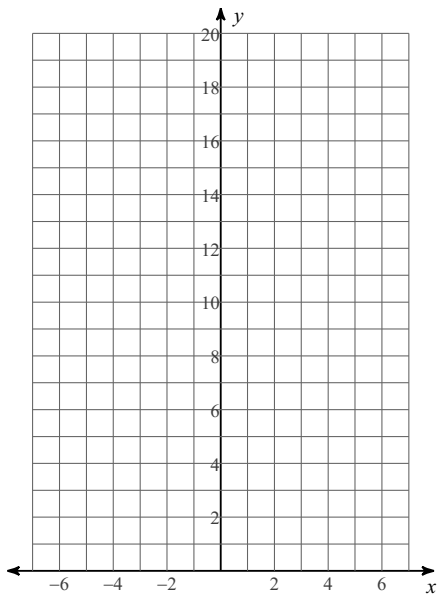
1)  $f(x) = 2^{x+2} - 1$



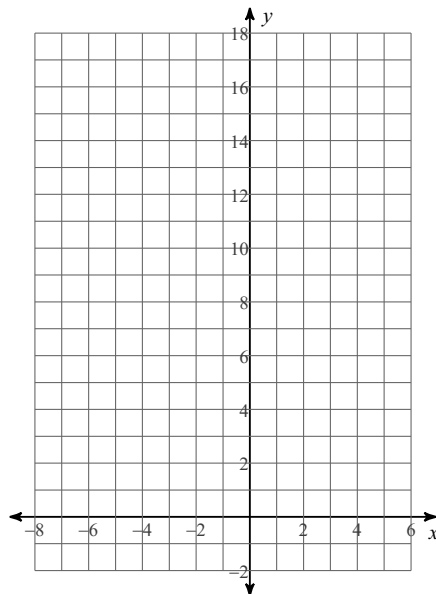
2)  $f(x) = 2^{x-1} + 2$



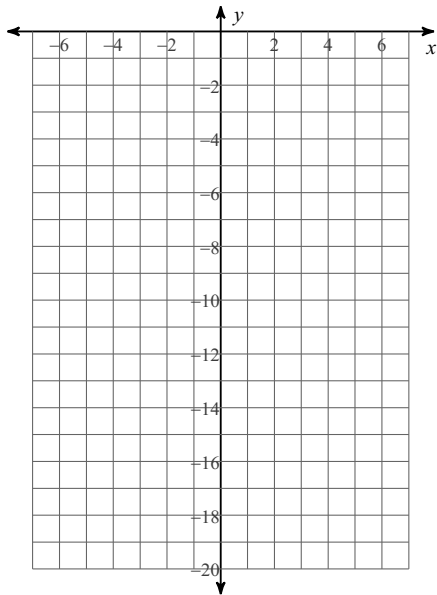
3)  $f(x) = 4 \cdot 2^x$



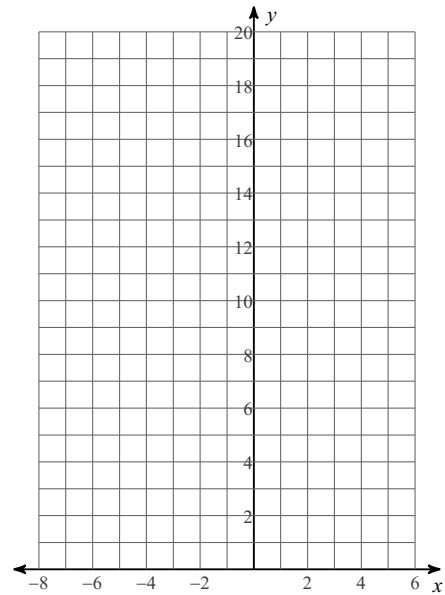
4)  $f(x) = 2^{x+1} - 2$



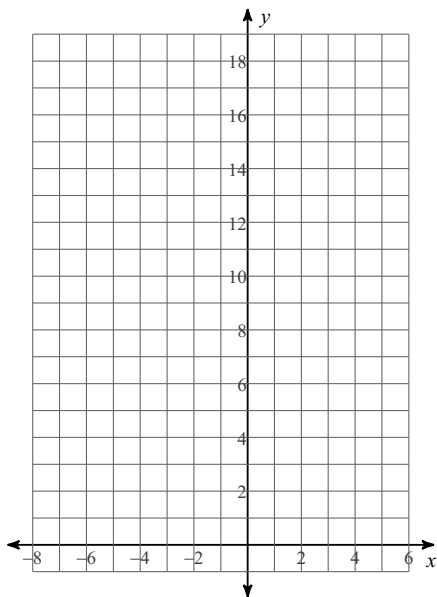
5)  $f(x) = -3 \cdot 2^x$



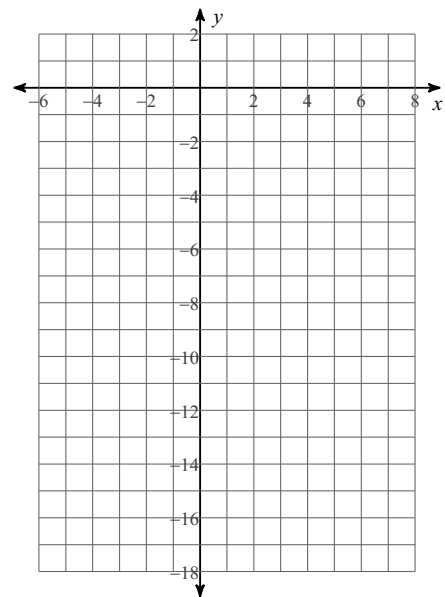
6)  $f(x) = 3^{x+1} + 2$



7)  $f(x) = 2 \cdot 3^{x+1} - 1$



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



**Simplify. Your answer should contain only positive exponents.**

9)  $\frac{2a^3 \cdot 3a^3b^3}{2b^2}$

10)  $\frac{3y}{4x^4y^3 \cdot 3y^3}$

11)  $x^4y^2 \cdot (y^{-3})^4$

12)  $2x^{-4}y^2 \cdot (x^4)^3$