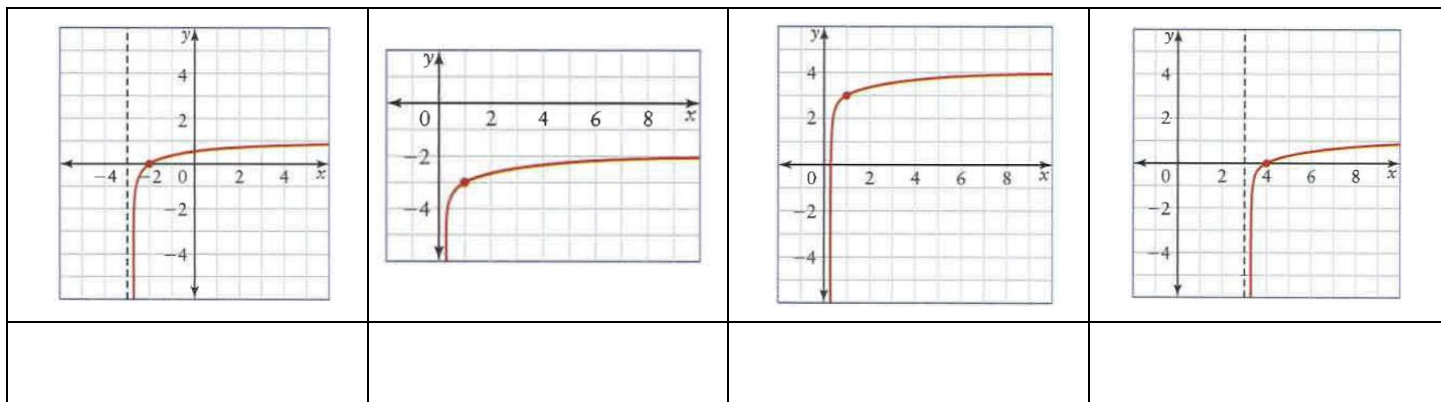**1)** Write the letter of the equation under the corresponding graph

**A)** $y = \log(x - 3)$ **B)** $y = \log x - 3$ **C)** $y = \log(x + 3)$ **D)** $y = \log x + 3$

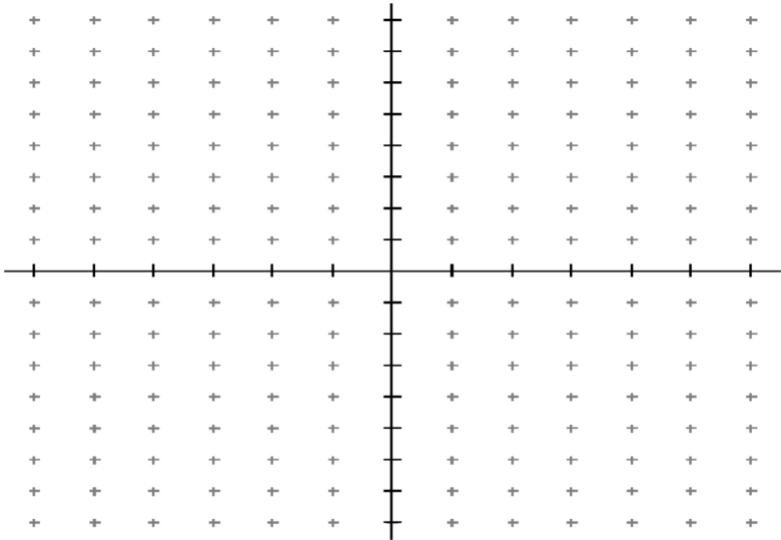| | | | |
|---|---|---|---|
| | | | |

**2)** Sketch a graph of each of the following logarithmic functions by applying transformations to the parent function. Make sure to identify key points such as asymptotes and $x$-intercepts.
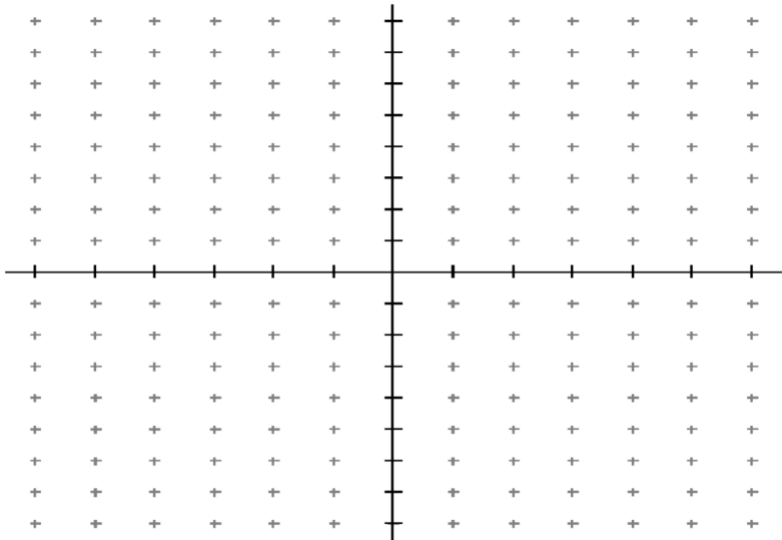
**a)** $f(x) = -2\log_2 x - 1$
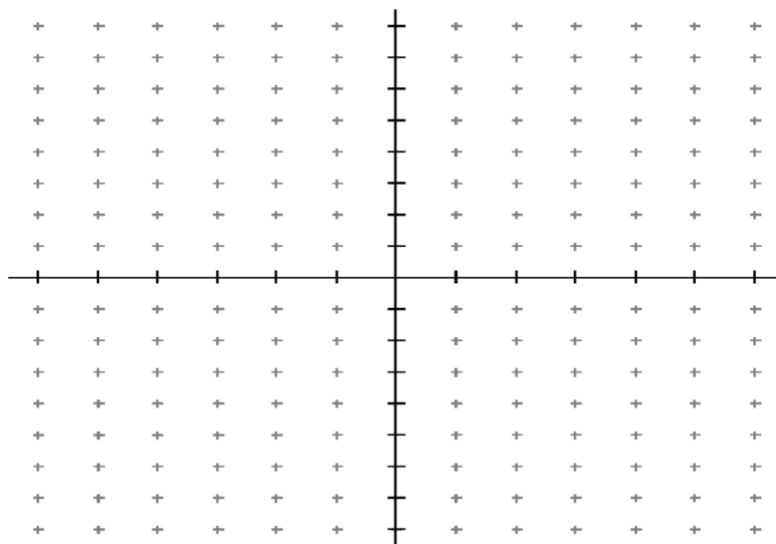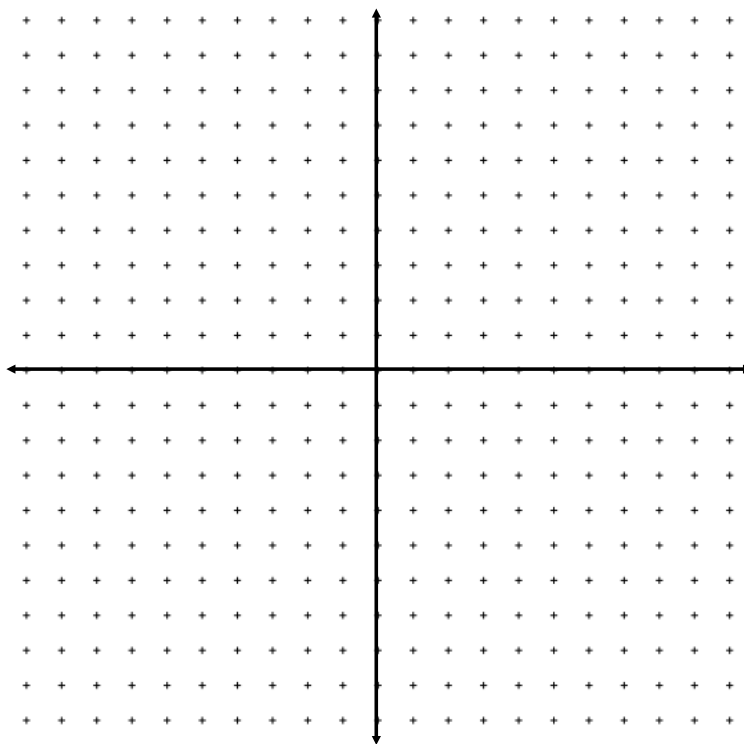
**b)** $g(x) = \log_4(x-1) + 4$

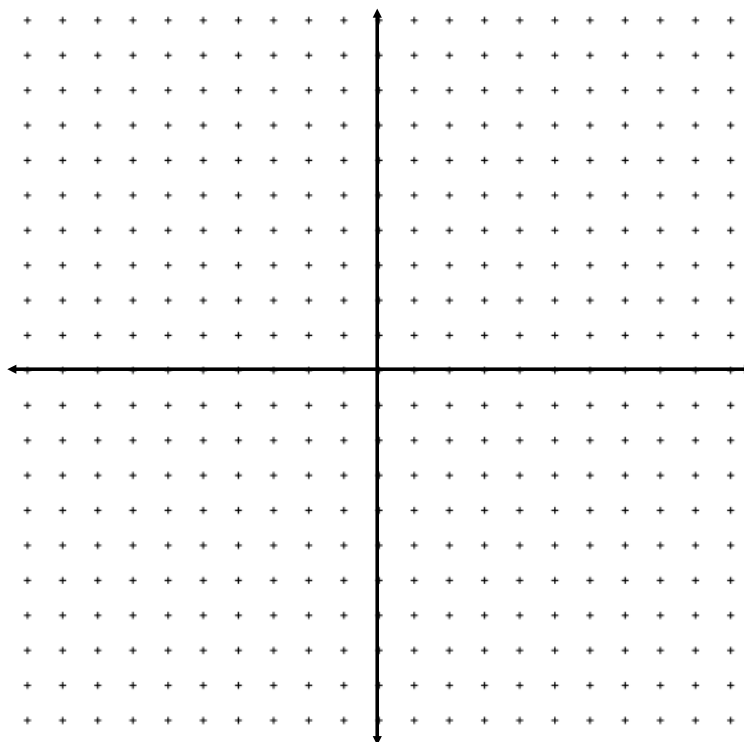**c)** $h(x) = 4\log_3\left[\frac{1}{2}(x+2)\right] - 3$

**3)** Sketch a graph of each of the following exponential functions by applying transformations to the parent function. Make sure to identify key points such as asymptotes and $y$-intercepts.

**a)** $f(x) = -3(2)^x + 1$

**b)** $g(x) = 3^{x-3} - 4$

**c)** $h(x) = 2(4)^{\frac{1}{2}(x+1)} - 3$