Name: **Date:**

Scaffolded Practice: Graphing Logarithmic Functions

For problems 1–4, sketch the graph of each function on a coordinate plane without using a calculator. Include at least four points for each graph.

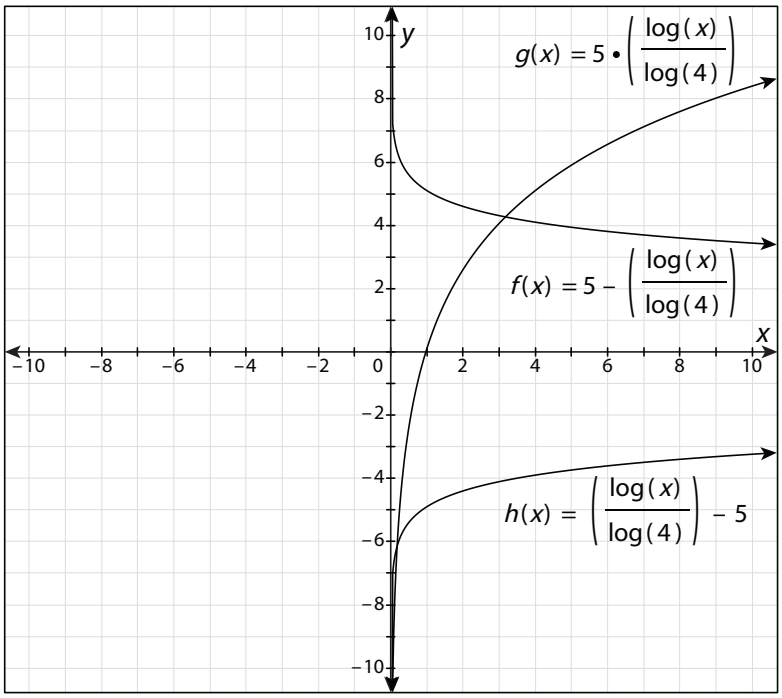
1. $a(x) = 3 \bullet \log_2 x$

2. $b(x) = 2 \bullet \log_3 (x + 1)$

3. $c(x) = 1 - 2 \bullet \log_4 x$

4. $d(x) = \log_2 (3 - x) - 4$

The functions $f(x)$, $g(x)$, and $h(x)$ are shown in the following graph. For problems 5–7, provide the domain, intercept(s), and range for each requested function. Then, write a simple logarithmic equation for each graphed function. Assume each function is of the form $f(x) = a + b \bullet \log_c$, and that c has the same value for all three functions.



5. $f(x)$

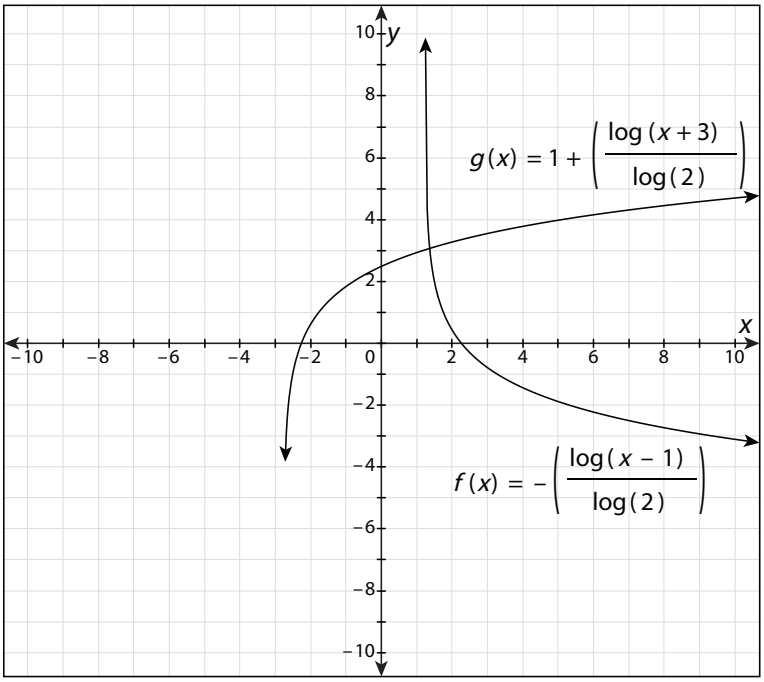
6. $g(x)$

7. $h(x)$

continued

Name: **Date:**

For problems 8–10, refer to the following graph of $f(x)$ and $g(x)$ to sketch the graph of the function described in each problem.



8. $a(x) = f(x) + g(x)$

9. $b(x) = f(x) - g(x)$

10. $c(x) = g(x) - f(x)$