Evaluate the Composition of Functions with Graphs   Name_____Key_____
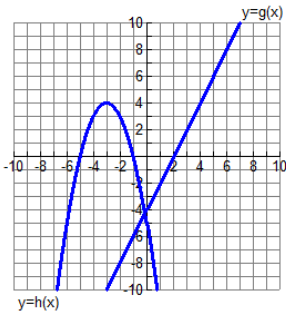
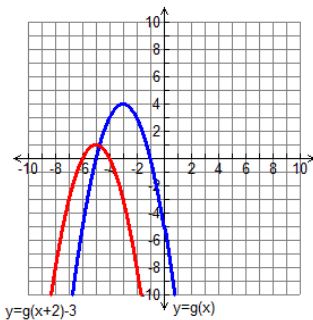**Target 1: I understand how to evaluate composite functions using a graph.**

1. The graphs of $y = g(x)$ and $y = h(x)$ are shown in the graph below. Approximate the value of $h\big(g(-3)\big)$.
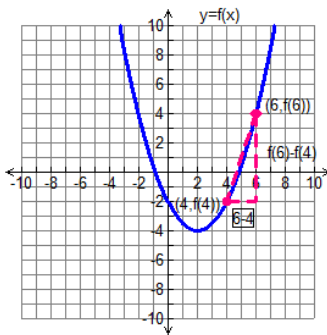

$g(h(-3)) = g(4) = 4$

Target 2: I understand how to sketch graphs of composite functions.

2. The graph of $y = g(x)$ is how in the graph below. Sketch the graph of $y = g(x+2) - 3$ on the same grid.

Target 3: I understand the meaning of function expressions as related to the graph.

3. Illustrate the meaning of $\dfrac{f(6) - f(4)}{6 - 4}$ on the graph below.

The slope of the secant line between $(4, f(4))$ and $(6, f(6))$:

$$\frac{f(6) - f(4)}{6 - 4} = \frac{4 - (-2)}{2} = 3$$

4. A point on the graph is labeled $(x, f(x))$. Illustrate the meaning of $\lim\limits_{h \to 0} \dfrac{f(x+h) - f(x)}{x+h-x}$.