Section 2.5: Additional Problems

1. Find the interval(s) of continuity for these functions.

   A) $y = \sqrt{4 - 5x}$ B) $y = \sqrt[3]{3x + 4}$

2. Suppose $f(x)$ and $g(x)$ are continuous functions and $f(8) = 5$. If you know $\lim\limits_{x \to 8} [6f(x) - g(x)] = 10$, find $g(8)$. If it is not possible, explain why.

3. Find the value(s) of x where this function will not be continuous.

$$f(x) = \begin{cases} \dfrac{16x}{x^2 - 9} & \text{if } x < 1 \\[2mm] 5x - 6 & \text{if } x \geq 1 \end{cases}$$

4. Find the values of c and d so that this function will be continuous.

$$f(x) = \begin{cases} x & \text{if } x \leq -1 \\ cx + d & \text{if } -1 < x < 2 \\ -5x^2 & \text{if } x \geq 2 \end{cases}$$