Consider the following descriptions of functions $f_1(x), \ldots, f_6(x)$:

1. $f_1'(x) > 0$ for $2 \leq x < 7$, $f_1(2) = 3$, and $f_1(7) = 3$.
2. $f_2(2) = 3$, $f_2(6) = 7$, and for $2 \leq x \leq 6$, $f_2'(x) \leq 0$.
3. $f_3'(x)$ exists and is $\neq 0$ for $0 \leq x \leq 4$ and $f_3(0) = -5$ and $f_3(4) = -5$.
4. $f_4'(x) > 0$ for $2 \leq x \leq 7$, $f_1(2) = 10$, and $f_1(7) = 3$.
5. $f_5'(x) = 0$ for all x except $x = 3$, $f_5(1) = 7$, $f_5(5) = 2$.
6. $f_6'(x)$ exists and is $\neq 0$ for $0 \leq x < 2$ and $2 < x \leq 4$; and $f_6(0) = -5$ and $f_6(4) = -5$.

For each $f_n(x)$ $(1 \leq n \leq 6)$:

- Determine if such a function $f_n(x)$ can possibly exist. (Three are possible, three are impossible. Remember that if $f_n'(c)$ exists, then f_n must be continuous at $x = c$, but at points where $f_n'(c)$ does not exist, $f_n(x)$ may not be continuous.)
- If such an $f_n(x)$ can exist, draw the graph of one possible $f_n(x)$.
- If $f_n(x)$ can't possibly exist, explain why (using the Mean Value Theorem), and get your group to agree on the explanation.