

Instructions: Check out the "Course Document" tab in webcampus. I've added some files (*Curve Sketching*) that will help with this problem. 2 pts added to your FINAL AVERAGE.

1. Sketch the graph of a twice-differentiable function $y = f(x)$ with the following properties:

- $f'(x) > 0$ for x in $(-4, 2)$ $f'(x) < 0$ for x in $(-\infty, -4) \cup (2, \infty)$
- $f''(x) > 0$ for x in $(-8, 2) \cup (2, \infty)$ $f''(x) < 0$ for x in $(-\infty, -8)$
- $f(-8) = 0$, $f(-4) = -5$, $f(-2) = 0$, $f(5) = 6$,
- $\lim_{x \rightarrow 2^-} f(x) = \infty$ $\lim_{x \rightarrow 2^+} f(x) = \infty$
- The domain of f is $(-10, 2) \cup (2, 10)$

2. Is the graph you drew the ONLY one that fulfills the given properties? If yes, explain why. If no, draw another and explain the difference. How many graphs are there that fulfill the given properties?

There's a grid for you on the next page. You must also attach work showing how you got your graph, like intervals of increasing/decreasing, concavity, etc.

Calculus 1 Task 4 Graphing

