

GROUP WORK 3, SECTION 4.5
Putting it All Together (Version 1)

Sketch the graph of a function $f(x)$ which has *all* of the following properties:

- $\lim_{x \rightarrow 2^-} f(x) = -\infty$
- $\lim_{x \rightarrow 2^+} f(x) = \infty$
- $\lim_{x \rightarrow -\infty} f(x) = 0$
- $f(-2) = 2$
- $f(5) = 1$
- $f(0) = 0$
- $f'(x) > 0$ if $x < -2$ or $x > 5$
- $f'(x) < 0$ if $-2 < x < 2$ or $2 < x < 5$
- $f'(5) = 0$
- $f'(-2) = 0$
- $f''(x) > 0$ if $x < -3$ or $x > 2$
- $f''(x) < 0$ if $-3 < x < 2$

