

Fall 2013
Kronenthal

MAT 181 Section 050
Optional Bonus Problems
Due on Friday, November 22

In class on Friday, November 15, we learned that if f is continuous (or has at most finitely many jump discontinuities) on $[a, b]$, then f is integrable on $[a, b]$.

1. Define a function $f(x)$ and an interval $[a, b]$ such that $f(x)$ has infinitely many jump discontinuities on $[a, b]$.
2. Define a function $g(x)$ such that $g(x)$ has infinitely many jump discontinuities, but only finitely many on ANY particular interval $[a, b]$.

For each problem, be sure to explain why your function satisfies the desired condition.