Quiz 11 — MA16020 — February 21, 2018
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1. (6 points) Rewrite each of these (improper) integrals as a limit of an integral. Do not solve the integral, and do not evaluate the limit.

   (a) $\displaystyle\int_0^\infty \ln(x+1)\ dx$

   (b) $\displaystyle\int_3^6 \frac{6}{x^2 - 3x}\ dx$

   (c) $\displaystyle\int_0^{\pi/2} \sec(x)\ dx$

2. Let $\displaystyle f(b) = \int_1^b \frac{1}{x^3}\ dx$.

   (a) (3 points) Simplify $f(b)$ completely by solving the integral.

   (b) (1 points) Find $\displaystyle\lim_{b\to\infty} f(b)$.