

WRITE YOUR NAME:

MAC 2312 Quiz 14
Tuesday March 12th

Evaluate the integral.

$$\text{Consider } \int_{17}^M \frac{1}{x^2} dx = \int_{17}^M x^{-2} dx = \left[\frac{x^{-1}}{-1} \right]_{17}^M$$

$$= \left[-\frac{1}{x} \right]_{17}^M = \left[\frac{1}{x} \right]_M^{17} = \frac{1}{17} - \frac{1}{M}$$

$$\int_{17}^{\infty} \frac{1}{x^2} dx = \lim_{M \rightarrow \infty} \left(\frac{1}{17} - \frac{1}{M} \right) = \frac{1}{17} - 0$$
$$= \boxed{\frac{1}{17}}$$