Quiz 9
ECEn 370

Name: _____KEY_____

1. Let X be distributed as $f_X(x) = \frac{1}{2\pi} u(x)u(2\pi - x)$, and let $Y = g(X) = \sin X$. Compute $E[Y]$ without solving for $f_Y(y)$.

$$E[Y] = \mu_y = \int_{-\infty}^{\infty} g(x) f_X(x)\, dx$$

$$= \int_0^{2\pi} \sin x\, dx = -\cos x \Big|_{x=0}^{x=2\pi} = -1 + 1 = 0$$