HOMEWORK 5

due date: November 23, 2018

1. Consider the function $f\colon [0, 2\pi] \to \mathrm{R}$, $f(x) = (\sin(x))^2$. Find $f([\pi, 2\pi])$ and $f([\frac{\pi}{2}, \pi])$.
   Extrapoint: Find the inverse of the function on the interval $[0, \frac{\pi}{2}]$.

2. Let $f\colon \mathrm{R} \to \mathrm{R}$, $f(x) = x^2$ and $g\colon (0, \infty) \to \mathrm{R}$, $g(x) = \log(x)$. Find the domain of definition for $f \circ g$ and $g \circ f$.