A31 Solutions to Midterm test. 2023

1. [6 points]

Given that $f(x)=\sqrt{x}$ and $g(x)=\sqrt{1-x}$. Find the domain of $f\circ g$ and an equation of $(f\circ g)(x)$

2pts ($f(x)=\sqrt{x}$, $g(x)=\sqrt{1-x}$

$f\circ g = \sqrt{\sqrt{1-x}} = (1-x)^{1/4} = \sqrt[4]{1-x}$

1pts (Dom $g(x) = (-\infty, 1]$ Dom $\sqrt[4]{1-x} = (-\infty, 1]$

2pts (Dom $f\circ g = (-\infty, 1] \cap (-\infty, 1] = (-\infty, 1]$