College of the Holy Cross, Spring Semester, 2019
Math 134 Worksheet 6
Due Thursday, February 14

1. Sketch the graphs of the given functions over the given intervals, and find the area between the graphs.

   (a) $f(x) = e^{-2x}$, $g(x) = x + 2$, $[1, 3]$

   (b) $f(x) = \sin(x)$, $g(x) = \cos(x)$, $[0, \pi/2]$

   (c) $f(x) = \dfrac{25x}{(x^2 + 1)^2}$, $g(x) = x$, $[0, 2]$

2. Sketch each region and find its area.

   (a) The region between the graphs of $f(x) = 3x$ and $g(x) = 8x - x^2$.

   (b) The region bounded by the line $y = 5 - x$ and the curve $y = \dfrac{6}{x}$.

   (c) The region bounded by $y = x + 1$, $y = 1$, and $y = \dfrac{6}{x}$.

   (d) The region between the graphs of $f(x) = |x - x^3|$ and $g(x) = |x| - 1$, between $x = -1$ and $x = 1$.