Assignment 9

1. Find the area of the region in the right half plane $x > 0$ bounded by the curves $y = x - x^3$ and $y = x^2 - x$.

2. Find the area of the region in the first quadrant bounded by the curves $y = \sin(\frac{\pi}{2}x)$ and $y = x$.

3. Find the area of the region under the curve $y = x\sqrt{x^2 + 1}$, above the x-axis and bounded by the lines $x = 1$ and $x = 3$.

4. Find the area under the curve $y = x^2 + x^{-2}$, above the x-axis and between the lines $x = 1$ and $x = 2$.

5. What is the area of the region bounded by the curves $y = x^3 - x$ and $y = 3x$.