

Directions: Without a calculator, find the area between each of the curves on the given interval or find the area of the region indicated.

1. Find the area between the curves $y = x^3 + 1$ and $y = x - 3$ from $x = -1$ to $x = -1$.
2. Find the area of the region enclosed by $y = x^2 + 1$ and $y = -x^2 + 3$.
3. Find the area of the region between $y = \sin^2 x$ and $y = \tan x$ from $x = 0$ to $x = \frac{\pi}{4}$.
4. Find the area of the region enclosed by the x-axis, the y-axis, $y = 3x^2 + 2$, and $y = 10x - 5$.
5. Find the total area of the regions enclosed between $y = x^3 - x + 1$ and $y = -x^3 + x + 1$.