

Show all work on other paper.

1. Find the area of the region bounded by $y = x^2$ and $y = x^3$
2. Find the area of the region bounded by $y = \sqrt{3x} + 1$, $y = x$, and $x = 0$.
3. Find the area of the region bounded by $y = x^3 - 2x^2 - 2x$ and $y = 3x^2 - 6x$
4. Find the volume of the solid formed by revolving the region enclosed by $y = x + 1$, $y = 0$, $x = 0$, and $x = 3$
 - a. about the x-axis
 - b. about the line $x = 4$
5. Find the volume of the solid formed by revolving the region enclosed by $y = 4 - x$, $y = 0$, and $x = 0$
 - a. about the y-axis
 - b. about the line $y = 4$
6. Find the volume of the solid formed by revolving the region enclosed by $y = -x^2 + 3x + 4$ and $y = 0$
 - a. about the x-axis
 - b. about the line $y = -1$
7. Find the volume of the solid formed by revolving the region enclosed by $y = 1 + \sqrt{x}$, $x = 0$, $y = 1$, and $x = 4$
 - a. about the line $x = 4$
 - b. about the x-axis
8. Find the volume of the solid formed by revolving the region enclosed by $y = 2 - x$, $y = 2x - 1$, and $x = 0$
 - a. about the y-axis
 - b. about the line $x = 2$
9. Find the volume of the solid formed by revolving the region enclosed by $y = x^2 + x$ and $y = 6$
 - a. about the line $y = 6$
 - b. about the line $y = -4$