LaTeX Assignment

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Exercise 8.1

1) Find the area of the region bounded by the curve $y^2 = x$ and the line $x = 1$, $x = 4$ and the x-axis in the first quadrant.
2) Find the area of the region bounded by $y^2 = 9x$, $x = 2$, $x = 4$ and the x-axis in the first quadrant.
3) Find the area of the region bounded by $x^2 = 4y$, $y = 2$, $y = 4$ and the y-axis in the first quadrant.
4) Find the area of the region bounded by the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$
5) Find the area of the region bounded by the ellipse $\frac{x^2}{4} + \frac{y^2}{9} = 1$
6) Find the area of the region in the first quadrant enclosed by x-axis, line $x = \sqrt{3}y$ and the circle $x^2 + y^2 = 4$.
7) Find the area of the smaller part of the circle $x^2 + y^2 = a^2$ cut off by the line $x = \frac{a}{\sqrt{2}}$.
8) The area between $x = y^2$ and $x = 4$ is divided into two equal parts by the line $x = a$, find the value of a.
9) Find the area of the region bounded by the parabola $y = x^2$ and $y = |x|$.
10) Find the area bounded by the curve $x^2 = 4y$ and the line $x = 4y - 2$
11) Find the area of the region bounded by the curve $y^2 = 4x$ and the line $x = 3$.

Choose the correct answer in the following Exercises 12 and 13.

12) Area lying in the first quadrant and bounded by the circle $x^2 + y^2 = 4$ and the lines $x = 0$ and $x = 2$ is

A) π B) $\frac{\pi}{2}$

C) $\frac{\pi}{3}$ D) $\frac{\pi}{4}$

13) Area of the region bounded by the curve $y^2 = 4x$, y-axis and the line $y = 3$ is

A) 2 B) $\frac{9}{4}$

C) $\frac{9}{3}$ D) $\frac{9}{2}$