

Area Problems

Without using absolute values, set up but do not evaluate an expression with one or more integrals which gives the area of region bounded by the given curves.

(Some of these problems require the use of a graphing calculator.)

1. $y = \sin(x^2)$, $x = 1.5$, $x = 2$, $y = 0$

2. $y = \frac{1}{x}$, $y = x$, $y = \frac{1}{4}x$

3. $x = 2y^2$, $x = 4 + y^2$

4. $y = \ln x$, $x = 3$, $y = 0$

5. $y = |x|$, $y = x^2 - 2$

6. $y = 1 + \sqrt{x}$, $y = \frac{3+x}{3}$

7. $y = \sqrt{x^2 + 5}$, $y = \sin x$, $x = -\pi$, and $x = \pi$

8. $y = x$, $y = \frac{x^5}{16}$

9. $y = \sin x$, $y = \cos x$, $x = \frac{\pi}{2}$, $x = \pi$

10 $y = 2x + 3$, $x = 4y$, $x + 2y = 6$