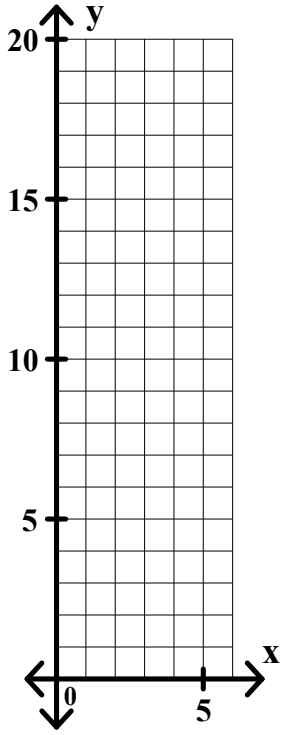
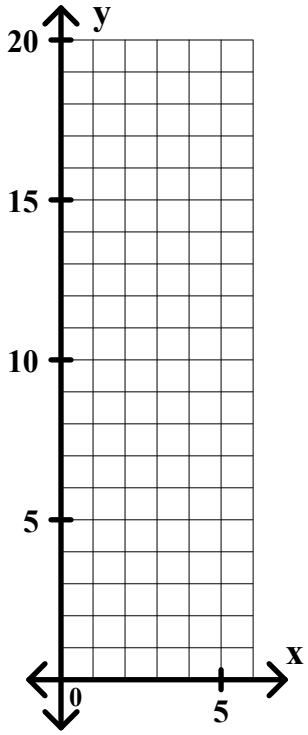
Calculus Worksheet #4 Unit 10 page 1 _____

Sketch the region described in each problem and find its area (3 significant digits).

1. The region is bounded by the x-axis, the lines x = 1 and x = 5, and the graph of the function $f(x) = e^{0.5x}$.



2. The region is bounded by the x-axis, the lines x = 0 and x = 4, and the graph of the function $f(x) = 2^x$.



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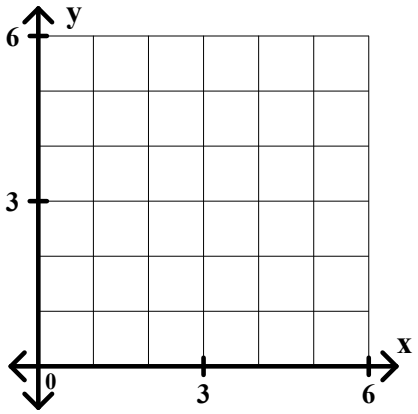
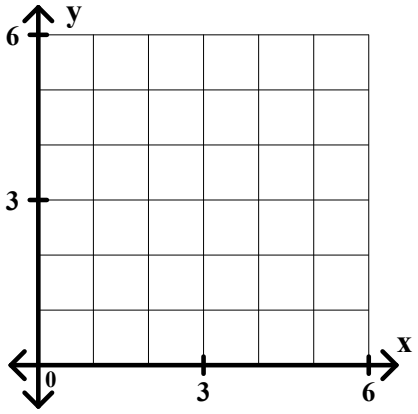
Sketch the region described in each problem and find its area (3 significant digits).

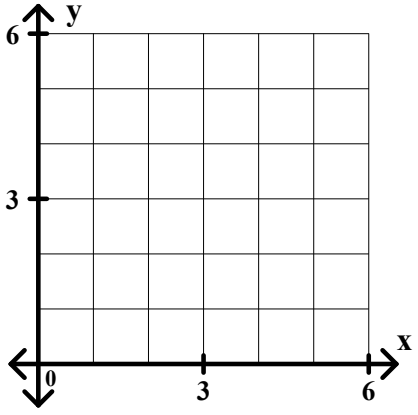
3. The region is bounded by the x-axis, the lines x = 1 and x = 4, and the graph of the function f(x) = 1/x.



4. The region is bounded by the x-axis, the lines x = 0.5 and x = 2.5, and the graph of the function f(x) = 2/x.



5. The region is bounded by the x-axis, the lines x = e and x = 2e, and the graph of the function f(x) = 6/x.



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Solve the following problems.

6. A particle moves on a straight line in such a way that its velocity is given by the function $v = 2t + \frac{3}{t+1}$. How far is the particle from its starting point after 10 seconds?

7. Find the area of the region enclosed by the functions $y = e^x$ and $y = e^{-x}$ and the line $x = \ln 4$.

8. Find the average value of the function $y = 12/x$ from $x = 1$ to $x = 3$.