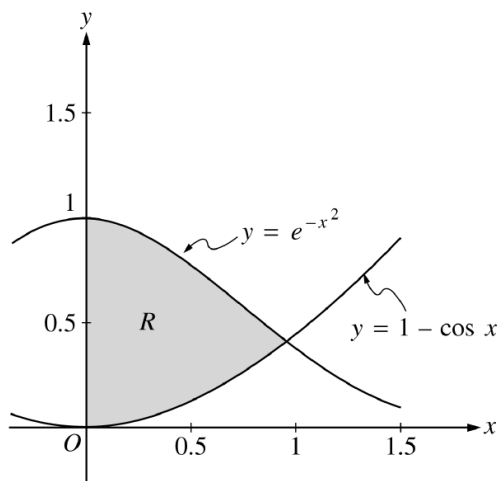
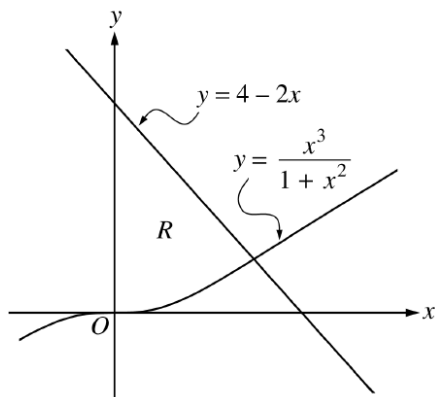


A graphing calculator is required for some problems or parts of problems

1.

Let R be the shaded region in the first quadrant enclosed by the graphs of $y = e^{-x^2}$, $y = 1 - \cos x$, and the y -axis, as shown in the figure above.

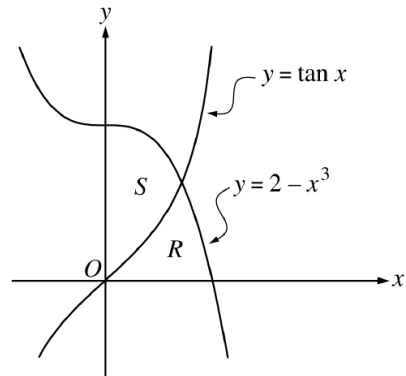
(a) Find the area of the region R .

2.

Let R be the region bounded by the y -axis and the graphs of $y = \frac{x^3}{1 + x^2}$ and $y = 4 - 2x$, as shown in the figure above.

(a) Find the area of R .

3.



Let R and S be the regions in the first quadrant shown in the figure above. The region R is bounded by the x -axis and the graphs of $y = 2 - x^3$ and $y = \tan x$. The region S is bounded by the y -axis and the graphs of $y = 2 - x^3$ and $y = \tan x$.

- (a) Find the area of R .
- (b) Find the area of S .