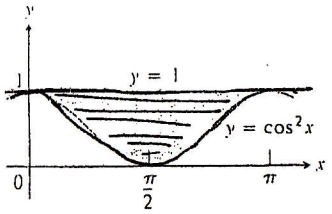
Monday
Feb 6, 2017

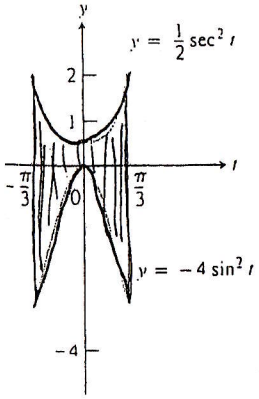
Calculus Extra Practice — Area of a Region (Demana/Waits)

In Exercises 1–6, find the area of the shaded region analytically.

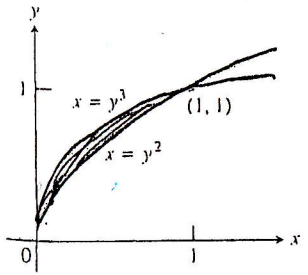
1.



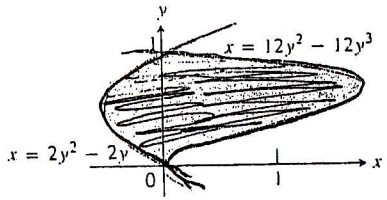
2.



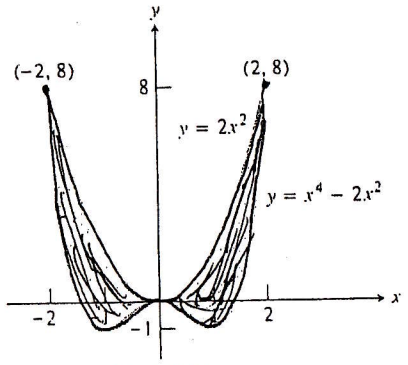
3.



4.

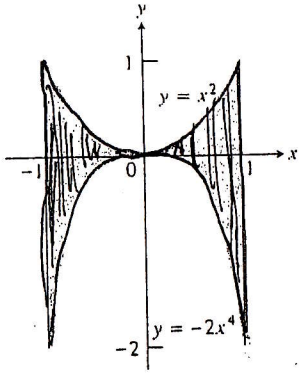


5.



NOT TO SCALE

6.



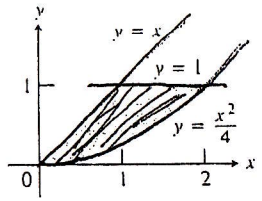
In Exercises 7 and 8, use a calculator to find the area of the region enclosed by the graphs of the two functions.

7. $y = \sin x,\ y = 1 - x^2$

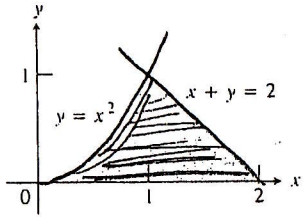
8. $y = \cos(2x),\ y = x^2 - 2$

In Exercises 9 and 10, find the area of the shaded region analytically.

9.



10.



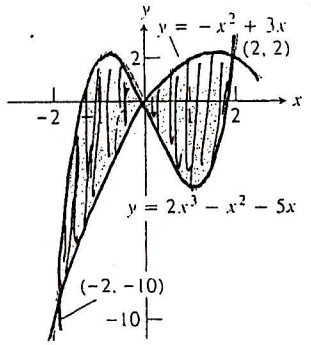
In Exercises 11 and 12, find the area enclosed by the graphs of the two curves by integrating with respect to y.

11. $y^2 = x + 1,\ y^2 = 3 - x$

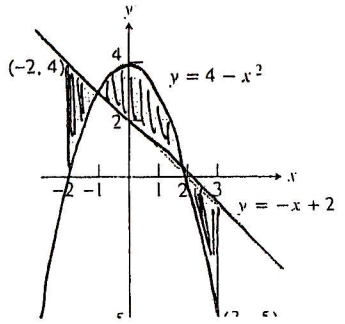
12. $y^2 = x + 3,\ y = 2x$

In Exercises 13 and 14, find the total shaded area.

13.



14.



Answers

1. $\pi/2$
2. $\frac{4\pi}{3}$
3. $1/12$
4. $4/3$
5. $128/15$
6. $22/15$
7. ≈ 1.6702
8. ≈ 4.3318
9. $5/6$
10. $5/6$
11. ≈ 7.542
12. $\frac{343}{48}$
13. 16
14. $\frac{49}{6}$