

Calc 2

6.2.36

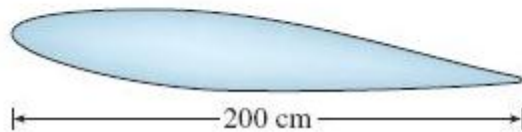
36. (a) Use the formulas for $\sin(A + B)$ and $\sin(A - B)$ to show that

$$\sin A \cos B = \frac{1}{2}[\sin(A - B) + \sin(A + B)]$$

- (b) Use part (a) to evaluate $\int \sin 3x \cos x \, dx$.

7.1.26

26. A cross-section of an airplane wing is shown. Measurements of the height of the wing, in centimeters, at 20-centimeter intervals are 5.8, 20.3, 26.7, 29.0, 27.6, 27.3, 23.8, 20.5, 15.1, 8.7, and 2.8. Use Simpson's Rule to estimate the area of the wing's cross-section.



8.6.12

11–12 ■ Express the function as the sum of a power series by first using partial fractions. Find the interval of convergence.

11. $f(x) = \frac{3}{x^2 + x - 2}$

12. $f(x) = \frac{7x - 1}{3x^2 + 2x - 1}$

8.7.44

43–46 ■ Evaluate the indefinite integral as an infinite series.


43. $\int x \cos(x^3) dx$

44. $\int \frac{\sin x}{x} dx$

8.8.18

9–16 ■

- (a) Approximate f by a Taylor polynomial with degree n at the number a .
 (b) Use Taylor's Formula to estimate the accuracy of the approximation $f(x) \approx T_n(x)$ when x lies in the given interval.

 (c) Check your result in part (b) by graphing $|R_n(x)|$.

9. $f(x) = \sqrt{1+x}$, $a = 0$, $n = 1$, $0 \leq x \leq 0.1$

10. $f(x) = 1/x$, $a = 1$, $n = 3$, $0.8 \leq x \leq 1.2$

11. $f(x) = \tan x$, $a = 0$, $n = 3$, $0 \leq x \leq \pi/6$

12. $f(x) = \cos x$, $a = \pi/3$, $n = 4$, $0 \leq x \leq 2\pi/3$

18. Use the information from Exercise 12 to estimate $\cos 69^\circ$ correct to five decimal places.

9.1.32 (b)(c)

31–32 ■ Compare the curves represented by the parametric equations. How do they differ?

31. (a) $x = t^3$, $y = t^2$

(b) $x = t^6$, $y = t^4$

(c) $x = e^{-3t}$, $y = e^{-2t}$

32. (a) $x = t$, $y = t^{-2}$

(b) $x = \cos t$, $y = \sec^2 t$

(c) $x = e^t$, $y = e^{-2t}$

9.3.50

47–50 ■ Find the slope of the tangent line to the given polar curve at the point specified by the value of θ .

47. $r = 2 \sin \theta$, $\theta = \pi/6$

48. $r = 2 - \sin \theta$, $\theta = \pi/3$

49. $r = 1/\theta$, $\theta = \pi$

50. $r = \sin 3\theta$, $\theta = \pi/6$

