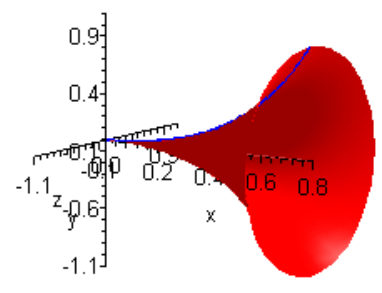
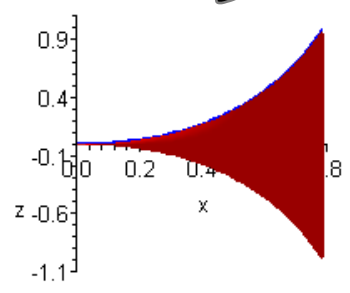


8.6 INTEGRATION USING TABLES AND COMPUTER ALGEBRA SYSTEMS

Maple



$$\begin{aligned} & \frac{1}{4} \pi \int_0^{\pi/4} \pi \tan^4 x \, dx \\ &= -\frac{2}{3} \pi + \frac{1}{4} \pi^2 \\ &= .373005998 \end{aligned}$$

8.6 #s 5, 10, 15, 20, 25, 30, 31

$$\sqrt{3}$$

$$\int \frac{dx}{e^x(3e^x + 2)}$$

#8.6 #38:

$$\int \frac{1}{\exp(x) \cdot (3 \cdot \exp(x) + 2)} \, dx$$

simplify(%)

$$-\frac{3}{4} \ln(e^x) + \frac{3}{4} \ln(3e^x + 2) - \frac{1}{2e^x} + C$$

$$-\frac{3}{4} \ln(e^x) + \frac{3}{4} \ln(3e^x + 2) - \frac{1}{2} e^{-x}$$

#43:

$$\int \frac{1}{x \cdot \text{sqrt}(1 - x^2)} \, dx$$

$$-\text{arctanh}\left(\frac{1}{\sqrt{1 - x^2}}\right)$$

$$\frac{1}{2} \int 2x \sin(x^2) \cos(3x^2) dx = \frac{1}{2} \int \sin u \cos(3u) du$$

$u = x^2 \rightarrow du = 2x dx$

$$= - \frac{\cos(a-b)u}{2(a-b)} - \frac{\cos(a+b)u}{2(a+b)} + C$$

$a=1, b=3$

$$= + \frac{\cos(-2u)}{2(+2)} - \frac{\cos(4u)}{2(4)} + C$$

$$= \frac{1}{4} \cos(2u) - \frac{1}{8} \cos(4u) + C$$

$$= \frac{1}{4} \cos(2x^2) - \frac{1}{8} \cos(4x^2) + C$$

Cosine is
EVEN