

Use the Table of Integrals to evaluate each of the following:

#1.  $\int e^{6x} \cos(2x) dx$

#2.  $\int \sqrt{16-9x^2} dx$

#3.  $\int xe^{4x} dx$

#4.  $\int xe^{3x^2} \cos(3x^2) dx$

#5.  $\int t^2 \sec^4(t^3) dt$

#6.  $\int x\sqrt{9x^4+25} dx$

#7.  $\int \sin^4(5t) dt$

#8.  $\int x^3 \ln x dx$

#9.  $\int \sin(3x) \cos(4x) dx$

#10.  $\int x\sqrt{x^4-4} dx$

#11.  $\int x \tan^3(5x^2) dx$

#12.  $\int \frac{\sqrt{2+9x^2}}{x^2} dx$

Determine whether the improper integral is convergent or divergent. If it converges, evaluate it.

#13.  $\int_3^{\infty} \frac{1}{x(\ln x)^5} dx$

#14.  $\int_4^{\infty} \frac{x}{x^{7/2}} dx$

#15.  $\int_0^5 \frac{1}{(x-1)^{1/5}} dx$

#16.  $\int_3^{\infty} x \ln(x^2) dx$

#17.  $\int_0^{\infty} \frac{x^2}{(1-x^3)^2} dx$