

A.

$$\int \sqrt{3x - 1} dx$$

converges to 1

0.

$$\int \frac{x}{\sqrt{2x-1}} dx$$

$$\frac{2}{9}(3x-1)^{3/2} + C$$

J.

$$\int \frac{dx}{9 + x^2}$$

$$\frac{1}{6}(2x - 1)^{3/2} + \frac{1}{2}(2x - 1)^{1/2} + C$$

F.

$$\int \frac{x^2}{\sqrt{25 - x^6}} dx$$

$$\frac{1}{3} \arctan(x/3) + C$$

B.

$$\int x e^{3x} dx$$

$$\frac{1}{3} \arcsin(x^3/5) + C$$

K.

$$\int \cos^3 x \sin^2 x \, dx$$

$$\frac{1}{3} x e^{3x} - \frac{1}{9} e^{3x} + C$$

I.

$$\int \sec^4 x \tan x dx$$

$$\mathbf{1/3 \sin^3 x - 1/5 \sin^5 x + C}$$

E.

$$\int \frac{1}{x^2 + x} dx$$

$$\mathbf{1/4 \tan^4 x + 1/2 \tan^2 x + C}$$

C.

$$\int_0^{\infty} \cos \frac{x}{2} dx$$

$$\ln |x| - \ln |x + 1| + C$$

G.

Solve the differential equation:

$$\frac{dy}{dt} = 3y \left(1 - \frac{y}{5} \right); y(0) = 2$$

diverges

L.

$$\int \sec 5x \tan 5x \, dx$$

$$y = \frac{5}{1 + 1.5e^{-3t}}$$

N.

$$\int \frac{dx}{x^2 + 12x + 45}$$

$$\mathbf{1/5 \sec 5x + C}$$

D.

$$\int \frac{4x^2}{x^2 + 25} dx$$

$$\mathbf{1/3 \arctan[(x+6)/3] + C}$$

H.

$$\int \ln 8x \, dx$$

$$4x - 20\arctan(x/5) + C$$

M.

$$\int_2^{\infty} \frac{1}{(x-1)^2} dx$$

$$x \ln 8x - x + C$$