Question: Compute $\frac{d}{dx}[\sin(\ln(x^2-5))]$.

Answer:

$$\cos(\ln(x^2-5))\frac{1}{x^2-5}2x$$

□

Question: Compute $\frac{d}{dx}[x^{\tan(x)}]$.

Answer:

$$x^{\tan(x)}\left[\ln|x|\sec^2(x)+\frac{\tan(x)}{x}\right]$$

□

Question: Compute $\int_0^2 x^2 e^{x^3}dx$.

Answer:

$$\frac{e^8-1}{3}$$

□

Question: Compute $\int \frac{\cos(\ln(x))}{x}dx$.

Answer:

$$\sin(\ln(x))+C$$

□

Question: Compute $\int x\cos(3x)dx$.

Answer:

$$\frac{x\sin(3x)}{3}+\frac{\cos(3x)}{9}+C$$

□

Question: Compute $\int e^x\sin(x)dx$.

Answer:

$$\frac{e^x(\sin(x)-\cos(x))}{2}+C$$

□

Question: Compute $\int \frac{x}{7x^2-4}dx$.

Answer:

$$\frac{\ln|7x^2-4|}{14}+C$$

□

Question: Compute $\tan(\sin^{-1}(x))$.

Answer:

$$\frac{x}{\sqrt{1-x^2}}$$

□

Question: Compute $(f^{-1})'(1)$ where $f(x) = \cos(x) + 9x$.

Answer:

$$\frac{1}{9}$$

□

Question: Compute $\int \frac{\cos^{-1}(x)}{\sqrt{1-x^2}} dx$

Answer:

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

□

Question: Compute $\lim_{x\to\infty} x \tan(\frac{1}{x})$.

Answer:

$$1$$

□

Question: Compute $\lim_{x\to\infty} x^{\frac{1}{\sqrt{x}}}$.

Answer:

$$1$$

□