

b $y = 1/x + \cos 2x$ Find $\frac{d^5 y}{dx^5}$

$$y = x^{-1} + \cos 2x \quad \frac{dy}{dx} = \frac{d}{dx}(x^{-1}) + \frac{d}{dx}(\cos 2x)$$

① $= -x^{-2}$ and	~~$-2 \sin 2x$~~	$-2 \sin 2x$
② $= +2x^{-3}$ and	~~$-4 \cos 2x$~~	$-4 \cos 2x$
③ $= -6x^{-4}$ and	~~$8 \sin 2x$~~	$8 \sin 2x$
④ $= 24x^{-5}$ and	~~$16 \cos 2x$~~	$16 \cos 2x$
⑤ $= -120x^{-6}$ and	~~$-32 \sin 2x$~~	$-32 \sin 2x$

$$\frac{d^5 y}{dx^5} = -120x^{-6} + 32 \sin 2x$$

c $f(x) = \ln(\sec x - \cot x)$ $f'(x) = \sec x$