

①

$$(d) y = e^{2x} \sin 3x.$$

$$\frac{dy}{dx} = 2e^x \quad \frac{du}{dx} = 3\cos 3x.$$

$$\frac{dy}{dx} = (\sin 3x)(2e^x) + (e^{2x})(3\cos 3x)$$

$$y = uv$$

$$\frac{dy}{dx} = v \frac{du}{dx} + u \frac{dv}{dx}$$

$$(e) y = \frac{\tan 7x}{\sin x}$$

$$\frac{du}{dx} = \tan 7x \quad \frac{dv}{dx} = \sin x$$

$$\frac{dy}{dx} = \frac{(\sin x)(\tan x) - (\tan x)(\sin x)}{(\sin x)^2}$$

$$\frac{dy}{dx} = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$$

$$(f) y = \sqrt{6x^2 - 3x + 5}$$

$$\frac{dy}{dx} = \sqrt{3x^2 + 5}$$