Calculate the following derivatives.

$$\frac{d}{dx} \frac{\sin(x^2)\cos x}{x^3+3}$$

$$\frac{d}{dx} \tan\left(\frac{x^3+4}{\sin(x^3)}\right)$$

$$\frac{d}{dx} \sqrt[3]{\frac{\sin(4x)\tan x}{x^2+(3x+2)^2}}$$

$$\frac{d}{dx} \sec(\cot(5x^2+2))$$

$$\frac{d}{dx} \frac{\csc(4x+2)}{\cos(\sqrt{x^2+2})+3}$$

$$\frac{d}{dx} \csc\left(\frac{x^2+3x}{\sin(4x^3)}\right)\sqrt{\frac{1+8x}{\cot(3x^2)}}$$

$$\frac{d}{dx} \frac{(x^2+3x)\cot(x^3)}{x^4+\cos(x^7)}$$