Derivatives Practice Sheet

Compute the following derivatives, for practice. Do not simplify!

1.
$$\sqrt[5]{\frac{x^2 \sin(3x)}{\tan(x)}}$$

2.
$$\tan^4(\sqrt[3]{x^5 + x^3 + 2} + 1).$$

3.
$$\cos\left(\frac{x^2 - \sqrt{5x^2 + 1}}{x^4 + \sin(x/2)}\right)$$

4.
$$\left(\sin(4\sqrt{5\tan(\sqrt[3]{\csc(3x^2)})})\right)^5$$

5.
$$\frac{\tan(x) + \sqrt[3]{\frac{7\sec(x)+x}{\sqrt{2\sin(x)}}}}{x^4 \sin(x/5)\cos(x)}$$

6.
$$\cot^{4/3}\left(\frac{\sqrt{\sin(3x/2) + 1} + x}{\sin(7x^{5/4})}\right)$$

7.
$$\sqrt[7]{\csc\left(\frac{\cos\left((x^3 + 1)^2 \sin(x)\right) + \tan(x)}{\sqrt{5x + 3\sin(x)}}\right)}$$