1. Differentiate the function \( f(x) = (3x^3 - 4x^2 + 11)^3 \). Express your answer in terms of elementary functions.

2. Let \( y = (x^4 + 11)^{\frac{3}{2}} \). Find \( \frac{dy}{dx} \). Express your answer in terms of elementary functions.

3. Let \( z = (\cos (t))^3 \). Find \( \frac{dz}{dt} \). Express your answer in terms of elementary functions.

4. Differentiate the function \( g(x) = \sqrt{7e^{-2x}} + 2 \). Express your answer in terms of elementary functions.

5. Differentiate the function \( f(x) = \frac{5}{\ln(x)^2} \). Express your answer in terms of elementary functions.

6. Let \( y = -\frac{3}{(\ln(x))^\pi} \). Find \( \frac{dy}{dx} \). Express your answer in terms of elementary functions.

7. Let \( y = -2 \ln(\sin(t) + 2) \). Find \( \frac{dy}{dt} \). Express your answer in terms of elementary functions.

8. Differentiate the function \( g(x) = e^{-4x} \sin(3x) \). Express your answer in terms of elementary functions.
1. \(3 \left(9x^2 - 8x\right) \left(3x^3 - 4x^2 + 11\right)^2\)
2. \(\frac{8x^3}{3 \left(x^4 + 11\right)^\frac{3}{2}}\)
3. \(-3 \left(\cos(t)\right)^2 \sin(t)\)
4. \(-\frac{7e^{-2x}}{\sqrt{7} e^{-2x} + 2}\)
5. \(-\frac{10}{x \left(\ln(x)\right)^3}\)
6. \(\frac{9}{5x \left(\ln(x)\right)^5}\)
7. \(-\frac{2 \cos(t)}{\sin(t) + 2}\)
8. \(3e^{-4x} \cos(3x) - 4e^{-4x} \sin(3x)\)