Exericse Compute the derivative of the following functions.

1. $f(x) = (3x^{10} - 5e^8)(3e^{2x} - 5(4^x))$.

2. $f(x) = 22 \ln\left(\dfrac{2}{3x} - 9x^{1.1}\right)$

3. $h(x) = \dfrac{3x - 2^x}{2\sqrt[3]{x^5}}$.

4. $f(x) = \dfrac{3}{2(4x^5 - \sqrt[3]{x^4})^4} + x^5$

5. $h(x) = (2^x - 5x)(\sqrt[3]{x^4} - 3\ln x)$.

6. $\dfrac{21.45}{1 + 3.62e^{-2.1x}} + 10x$

7. $f(x) = \dfrac{3x^9 - 7(5^x)}{3e^{4x}} + 3x$.

8. $h(x) = 2e^{\sqrt[5]{x^2} + 3e^x} + \ln x$

9. $g(x) = (3x^7 + 2(3^x))(e^{3.1x} - 5\ln x)$.

10. $f(x) = \sqrt[3]{e^{3x} + 3\ln x + 2^x}$

11. $g(x) = (2x^5 + e^2)(2\ln x - 5x^6)$.

12. $f(x) = \dfrac{e}{(4x^2 - \sqrt[5]{x^2})^2}$

More Exercise:

1. $f(x) = \big(2\ln(3x^5 + 3x)\big)(e^x + 4x^5)$

2. $(8x^2 + e^3)(\dfrac{12}{1 + 5e^{-0.3x}})$

3. $f(x) = \dfrac{2x^3 + 3e}{x^2 + 2x}$

4. $f(x) = 20(-2x^{-2} + 3e^{5x^3})^6$

5. $f(x) = 5\ln(e^{3x^4} + 2x)$

6. $f(x) = \left(5e^{\sqrt{x} + 2x^3}\right)\left(2.2(\ln x) + e^3\right)$