

Differentiate each function

1. $f(x) = -5 \cdot x^3 + \frac{3}{\sqrt{x}}$

2. $g(x) = \frac{3}{x} - 4 + 5x$

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

4. $f(x) = \pi + 3 \cdot e^x + x^e - e^\pi$

5. $g(x) = (3x - 4) \cdot (\sqrt{x} + x^2)$

6. $h(x) = 3x^4 \cdot e^x$

7. $F(x) = \frac{2x^2}{x - 3}$

8. $G(x) = \frac{\sqrt[4]{x^3} - 1}{x^2 + 2}$

9. $f(x) = \frac{\frac{2}{\sqrt{x}} + \frac{\sqrt{2}}{x}}{\sqrt{x}}$

10. $g(x) = \frac{x^2}{\sqrt{\pi} + \sqrt[3]{e}}$