Basic Rules of Differentiation

Basic Rules	*Example(s):* Find derivative of each given function.
Derivative of a Constant $=$ 0	$f(x) = 3$ | $g(x) = e$
Power Rule: $\frac{d}{dx}(x^n) = nx^{n-1}$	$f(x) = x^4$ | $g(x) = x$ | $h(x) = \sqrt{x}$
Coefficient Rule: $\frac{d}{dx}\big(cf(x)\big) = c\frac{d}{dx}(f(x))$	$f(x) = 3x^5$ | $g(x) = -2x^3$ | $h(x) = \frac{x^5}{4}$
Sum & Difference Rule: $\frac{d}{dx}\big(f(x) \pm g(x)\big) = \frac{d}{dx}(f(x)) \pm \frac{d}{dx}(g(x))$	$f(x) = x^2 + 3x + 2$ | $g(x) = 4x^5 - 7x^2 + 3x$