



# Derivative Rules - Natural Exponential

## Exponent Binomial to Derivative

<b>1</b> Find the derivative $f'(x)$ using the natural exponential rule and the chain rule. $f(x) = 2e^{x^3-2x}$	<b>2</b> Find the derivative $f'(x)$ using the natural exponential rule and the chain rule. $f(x) = 2e^{2x^2-3x}$
$f'(x) = 2e^{x^3-2x} \cdot (x^3 - 2x)$	$f'(x) = 2e^{2x^2-3x} \cdot (2x^2 - 3x)$
$f'(x) = 2(x^3 - 2x)e^{x^3-2x-1}$	$f'(x) = 2(2x^2 - 3x)e^{2x^2-3x-1}$
<b>3</b> Find the derivative $f'(x)$ using the natural exponential rule and the chain rule. $f(x) = 4e^{2x^4-x^3}$	<b>4</b> Find the derivative $f'(x)$ using the natural exponential rule and the chain rule. $f(x) = 4e^{2x^2-x}$
$f'(x) = 4(2x^4 - x^3)e^{2x^4-x^3-1}$	$f'(x) = 4e^{2x^2-x} \cdot (2x^2 - x)$
$f'(x) = 4e^{2x^4-x^3} \cdot (2x^4 - x^3)$	$f'(x) = 4(2x^2 - x)e^{2x^2-x-1}$
<b>5</b> Find the derivative $f'(x)$ using the natural exponential rule and the chain rule. $f(x) = 3e^{x^4-3x}$	<b>6</b> Find the derivative $f'(x)$ using the natural exponential rule and the chain rule. $f(x) = e^{x^3-3x}$
$f'(x) = 3e^{x^4-3x} \cdot (4x^3 - 3)$	$f'(x) = (x^3 - 3x)e^{x^3-3x-1}$
$f'(x) = 3e^{x^4-3x}$	$f'(x) = e^{x^3-3x} \cdot (x^3 - 3x)$
<b>7</b> Find the derivative $f'(x)$ using the natural exponential rule and the chain rule. $f(x) = e^{3x^2-3x}$	<b>8</b> Find the derivative $f'(x)$ using the natural exponential rule and the chain rule. $f(x) = e^{3x^2-2x}$
$f'(x) = e^{3x^2-3x} \cdot (6x - 3)$	$f'(x) = e^{3x^2-2x} \cdot (6x - 2)$
$f'(x) = (3x^2 - 3x)e^{3x^2-3x-1}$	$f'(x) = (3x^2 - 2x)e^{3x^2-2x-1}$