Calculus Lesson #2

Differentiation Rules

Class Worksheet #2

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

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Consider the following examples using the 'four-step method'.

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Step 1: Find $f(x + \Delta x)$.

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The four-step method

Step 1: Find f(x + Δx).

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Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) =$ _______.

Consider the following examples using the 'four-step method'.

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The four-step method

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Look for patterns in these problems.

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Look for patterns in these problems.

1. The exponent of the power function

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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1. If $f(x) = x^n$, then $f'(x) =$ _______.

a. $f(x) = x^2$

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Look for patterns in these problems.

1. The exponent of the power function becomes the coefficient of the derivative.

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c. $f(x) = x^4$

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Look for patterns in these problems.

1. The exponent of the power function becomes the coefficient of the derivative.

2. The 'new' exponent

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) =$ _______.

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Look for patterns in these problems.

1. **The exponent of the power function becomes the coefficient of the derivative.**
2. **The 'new' exponent is one less than the original exponent.**

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) =$ _______.

a. $f(x) = x^2$

$f'(x) = 2x^1$

b. $f(x) = x^3$

$f'(x) = 3x^2$

c. $f(x) = x^4$

$f'(x) = 4x^3$

Look for patterns in these problems.

1. The exponent of the power function becomes the coefficient of the derivative.
2. The 'new' exponent is one less than the original exponent.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

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a. $f(x) = x^2$

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Use these patterns to answer question #1.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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Given any function f. The function f ′ is defined by the equation $f'(x) = \lim_{\Delta x \to 0}\left[\frac{f(x+\Delta x) - f(x)}{\Delta x}\right]$

The four-step method

Step 1: Find f(x + Δx).

Step 2: Subtract f(x).

Step 3: Divide by Δx.

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Step 3: Divide by Δx.

Step 4: Evaluate the limit as Δx approaches 0.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

2. If f(x) = g(x) + h(x) , then f '(x) = $\underline{\;g'(x) + h'(x)\;}$.

In this problem, the function f is the sum of two other functions, g and h. It can be shown, using the four-step method and properties of limits, that the derivative of f is the sum of the derivatives of g and h.

$$f(x + \Delta x) = g(x + \Delta x) + h(x + \Delta x)$$

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Complete each of the following 'rules of differentiation'.

3. If f(x) = Cg(x), where C represents a constant, then f '(x) = _______.

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Step 1: Find f(x + Δx).

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Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

3. If f(x) = Cg(x), where C represents a constant, then f '(x) = ________.

In this problem, the function f is the product of a constant and function g. It can be shown, using the four-step method and properties of limits, that the derivative of f is the product of the same constant and the derivative of function g.

$$f(x + \Delta x) = Cg(x + \Delta x)$$

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Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

4. If $f(x) = C$, where C represents a constant, then $f'(x) =$ ___.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

4. If f(x) = C, where C represents a constant, then f'(x) = ___.

In this problem, the function f is a <u>constant function</u>.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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4. If f(x) = C, where C represents a constant, then f'(x) = ___.

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$$f'(x) = \lim_{\Delta x \to 0}\left[\frac{f(x + \Delta x) - f(x)}{\Delta x}\right] = \lim_{\Delta x \to 0}[\,0\,] = 0$$

Given any function f. The function f ′ is defined by the equation $f'(x) = \lim_{\Delta x \to 0}\left[\frac{f(x + \Delta x) - f(x)}{\Delta x}\right]$

The four-step method

Step 1: Find f(x + Δx).

Step 2: Subtract f(x).

Step 3: Divide by Δx.

Step 4: Evaluate the limit as Δx approaches 0.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

4. If f(x) = C, where C represents a constant, then f'(x) = __0__.

In this problem, the function f is a constant function. It can be shown, using the four-step method, that f'(x) = 0.

$$f(x + \Delta x) = C$$

$$f(x + \Delta x) - f(x) = C - C = 0$$

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Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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4. If f(x) = C, where C represents a constant, then f'(x) = __0__.

Of course, the function f(x) = C represents a horizontal line.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

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4. If f(x) = C, where C represents a constant, then f'(x) = __0__.

Of course, the function f(x) = C represents a horizontal line. The derivative function gives the 'slope of the graph' as a function of x. Since any horizontal line has slope 0, f '(x) = 0.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

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Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{\; n x^{(n-1)} \;}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{\; g'(x) + h'(x) \;}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{\; Cg'(x) \;}$.
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Using these rules, we can 'easily' find the derivative of any function which is expressed in 'polynomial form'.

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Using these rules, we can 'easily' find the derivative of any function which is expressed in 'polynomial form'. (The function is a sum (or difference) of terms, where each term is a constant, a power of x, or the product of a constant and a power of x.

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Before we proceed to problem #5, consider the following functions.

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Before we proceed to problem #5, consider the following functions.

$f(x) = 3x$

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Before we proceed to problem #5, consider the following functions.

$f(x) = 3x$ $\qquad$ $g(x) = 7x$

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1. If $f(x) = x^n$, then $f'(x) =$ $\underline{n x^{(n-1)}}$.
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$f(x) = 3x$ $\quad$ $g(x) = 7x$ $\quad$ $h(x) = -4x$

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Since these functions are all linear,

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$f(x) = 3x$ $\qquad$ $g(x) = 7x$ $\qquad$ $h(x) = -4x$

Since these functions are all linear, the derivative is simply the slope of the line the function represents.

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$f'(x) = 3$ $g'(x) = 7$

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We can obtain the same results using the 'rules'.

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We can obtain the same results using the 'rules'. Since each of the functions is the product of a constant and the variable x,

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We can obtain the same results using the 'rules'. Since each of the functions is the product of a constant and the variable x, rule 3 tells us that the derivative is the product of the same constant and the derivative of x.

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Before we proceed to problem #5, consider the following functions.

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We can obtain the same results using the 'rules'. Since each of the functions is the product of a constant and the variable x, rule 3 tells us that the derivative is the product of the same constant and the derivative of x. Since $x = x^1$, its derivative using rule 1, is $1x^0 = 1$. Therefore, the derivative of a linear function is simply the coefficient of x,

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Before we proceed to problem #5, consider the following functions.

$f(x) = 3x$	$g(x) = 7x$	$h(x) = -4x$
$f'(x) = 3$	$g'(x) = 7$	$h'(x) = -4$

We can obtain the same results using the 'rules'. Since each of the functions is the product of a constant and the variable x, rule 3 tells us that the derivative is the product of the same constant and the derivative of x. Since $x = x^1$, its derivative using rule 1, is $1x^0 = 1$. Therefore, the derivative of a linear function is simply the coefficient of x, which is the slope of the line the function represents.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{\; n x^{(n-1)} \;}$.
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3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{\; Cg'(x) \;}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{\; 0 \;}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

5. $f(x) = x^2 + 7x + 4$ $\qquad f'(x) =$ ______________

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1. If $f(x) = x^n$, then $f'(x) = \underline{n\,x^{(n-1)}}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

5. $f(x) = x^2 + 7x + 4$ $\qquad f'(x) =$ ____________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

5. $f(x) = x^2 + 7x + 4$ $f'(x) =$ ______________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

5. $f(x) = x^2 + 7x + 4$ $f'(x) = \underline{2x^1 \qquad\qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) =$ $\underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) =$ $\underline{g'(x) + h'(x)}$.
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5. $f(x) = x^2 + 7x + 4$ $f'(x) =$ $\underline{2x \qquad\qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

5. $f(x) = x^2 + 7x + 4$ $\quad f'(x) = \underline{2x + 7}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Find the derivative of each term.

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Find the derivative of each term.

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

6. $f(x) = 5x^2 - 4x - 2$ $f'(x) =$ ______________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
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Find the derivative of each term.

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

6. $f(x) = 5x^2 - 4x - 2$ $\quad f'(x) = \underline{5(\qquad\qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{\; n x^{(n-1)} \;}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{\; g'(x) + h'(x) \;}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{\; Cg'(x) \;}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{\; 0 \;}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

6. $f(x) = 5x^2 - 4x - 2$ $\qquad f'(x) = \underline{\; 5(2x^1) \qquad\qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

6. $f(x) = 5x^2 - 4x - 2$ $f'(x) = \underline{10x \qquad\qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. **If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.**
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6. $f(x) = 5x^2 - 4x - 2$ $\qquad f'(x) = \underline{10x - 4}$

Find the derivative of each term.

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

7. $f(x) = x^3 - 7x^2 + x + 5$ $\quad f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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7. $f(x) = x^3 - 7x^2 + x + 5$ $f'(x) = \underline{3x^2}$ ____________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Find the derivative of each term.

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7. $f(x) = x^3 - 7x^2 + x + 5$ $\quad f'(x) = \underline{3x^2 - 7(\qquad\qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

7. $f(x) = x^3 - 7x^2 + x + 5$ $f'(x) = \underline{3x^2 - 7(2x^1)}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

7. $f(x) = x^3 - 7x^2 + x + 5$ $\qquad f'(x) = \underline{3x^2 - 14x \qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = $ $\underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = $ $\underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = $ $\underline{Cg'(x)}$.
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Find the derivative of each term.

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

7. $f(x) = x^3 - 7x^2 + x + 5$ $\qquad f'(x) = \underline{3x^2 - 14x + 1}$

Find the derivative of each term.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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7. $f(x) = x^3 - 7x^2 + x + 5$ $f'(x) = \underline{3x^2 - 14x + 1}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. **If $f(x) = x^n$, then $f'(x) =$ <u>$n x^{(n-1)}$</u>.**
2. **If $f(x) = g(x) + h(x)$, then $f'(x) =$ <u>$g'(x) + h'(x)$</u>.**
3. **If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) =$ <u>$Cg'(x)$</u>.**
4. **If $f(x) = C$, where C represents a constant, then $f'(x) =$ <u>0</u>.**

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

7. $f(x) = x^3 - 7x^2 + x + 5$ $\qquad$ $f'(x) =$ <u>$3x^2 - 14x + 1 + 0$</u>

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{\; n\,x^{(n-1)} \;}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{\; g'(x) + h'(x) \;}$.
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4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{\; 0 \;}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

8. $f(x) = 1 - 5x^3$ $\qquad$ $f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

8. $f(x) = 1 - 5x^3$ $f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

8. $f(x) = 1 - 5x^3$ $\qquad f'(x) = \underline{\ 0\qquad\qquad\qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. **If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.**
2. **If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.**
3. **If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.**
4. **If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.**

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

8. $f(x) = 1 - 5x^3$ **$f'(x) = \underline{\ 0 \qquad\qquad}$**

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

8. $f(x) = 1 - 5x^3$ $\quad f'(x) = \underline{\ \ 0 - 5(\qquad\qquad\qquad}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

8. $f(x) = 1 - 5x^3$ $\qquad$ $f'(x) = \underline{0 - 5(3x^2)}$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

8. $f(x) = 1 - 5x^3$ $\qquad f'(x) = \underline{\ 0 - 15x^2\ }$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) =$ $\underline{n\,x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) =$ $\underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) =$ $\underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) =$ $\underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

8. $f(x) = 1 - 5x^3$ $\qquad f'(x) =$ $\underline{-15x^2}$

Find the derivative of each term.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. **If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.**
2. **If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.**
3. **If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.**
4. **If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.**

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

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9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) =$ $\underline{\; n x^{(n-1)} \;}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) =$ $\underline{\; g'(x) + h'(x) \;}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) =$ $\underline{\; Cg'(x) \;}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) =$ $\underline{\; 0 \;}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

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Find the derivative of each term.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

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3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) =$ ________________

$f(x) =$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) =$ ________________

$f(x) = 10x^2$

Find the derivative of each term.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) =$ ________________

$f(x) = 10x^2 + 11x$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) =$ ________________

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
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Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) =$ ________________

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n\,x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) = \underline{10(\qquad\qquad}$

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
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4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) = \underline{10(2x^1)\qquad\qquad}$

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) = \underline{20x \qquad\qquad}$

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
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9. $f(x) = (2x + 3)(5x - 2)$ $\quad f'(x) = \underline{20x \qquad\qquad}$

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) = \underline{20x + 11}$

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. **If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.**
2. **If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.**
3. **If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.**
4. **If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.**

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) = \underline{20x + 11}$

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{\ n x^{(n-1)}\ }$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{\ g'(x) + h'(x)\ }$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{\ 0\ }$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

9. $f(x) = (2x + 3)(5x - 2)$ $\quad f'(x) = \underline{\ 20x + 11 + 0\ }$

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
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9. $f(x) = (2x + 3)(5x - 2)$ $f'(x) = \underline{20x + 11}$

$f(x) = 10x^2 + 11x - 6$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{\ n\,x^{(n-1)}\ }$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{\ g'(x) + h'(x)\ }$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{\ 0\ }$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $\qquad f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $f'(x) =$ ______________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. **If $f(x) = x^n$, then $f'(x) = \underline{\;n\,x^{(n-1)}\;}$.**
2. **If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{\;g'(x) + h'(x)\;}$.**
3. **If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{\;Cg'(x)\;}$.**
4. **If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{\;0\;}$.**

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ **$f'(x) =$ ________________**

$f(x) =$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $f'(x) =$ ______________

$f(x) = 25x^2$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $\qquad f'(x) =$ ________________

$f(x) = 25x^2 - 10x$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $f'(x) =$ ________________

$f(x) = 25x^2 - 10x + 1$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $\qquad f'(x) =$ ________________

$f(x) = 25x^2 - 10x + 1$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
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Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $\qquad f'(x) = \underline{25(\qquad\qquad}$

$f(x) = 25x^2 - 10x + 1$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $\qquad$ $f'(x) = \underline{25(2x^1)\qquad\qquad}$

$f(x) = 25x^2 - 10x + 1$

Find the derivative of each term.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) =$ $\underline{n\,x^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) =$ $\underline{g'(x) + h'(x)}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

10. $f(x) = (5x - 1)^2$ $f'(x) =$ $\underline{50x\qquad\qquad}$

$f(x) = 25x^2 - 10x + 1$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{\ n x^{(n-1)}\ }$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

11. $f(x) = (x - 2)^3$ $f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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1. **If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.**
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$f(x) = x^3$

Find the derivative of each term.

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11. $f(x) = (x - 2)^3$ $f'(x) =$ ________________

$f(x) = x^3 - 6x^2$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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11. $f(x) = (x - 2)^3$ $f'(x) =$ ________________

$f(x) = x^3 - 6x^2 + 12x$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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11. $f(x) = (x-2)^3$ $\qquad f'(x) = \_\_\_\_\_\_\_\_\_\_\_\_$

$f(x) = x^3 - 6x^2 + 12x - 8$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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11. $f(x) = (x - 2)^3$ $f'(x) =$ ________________

$f(x) = x^3 - 6x^2 + 12x - 8$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

11. $f(x) = (x - 2)^3$ $\qquad f'(x) = \underline{3x^2 \qquad\qquad}$

$f(x) = x^3 - 6x^2 + 12x - 8$

Find the derivative of each term.

Calculus Class Worksheet #2   Unit 1   Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{\ n x^{(n-1)}\ }$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{\ g'(x) + h'(x)\ }$.
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$f(x) = x^3 - 6x^2 + 12x - 8$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

11. $f(x) = (x - 2)^3$ $f'(x) = \underline{3x^2 - 6(\qquad}$

$f(x) = x^3 - 6x^2 + 12x - 8$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Find the derivative of each term.

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11. $f(x) = (x - 2)^3$ $f'(x) = \underline{3x^2 - 12x + 12} + 0$

$f(x) = x^3 - 6x^2 + 12x - 8$

Find the derivative of each term.

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Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{nx^{(n-1)}}$.
2. If $f(x) = g(x) + h(x)$, then $f'(x) = \underline{g'(x) + h'(x)}$.
3. If $f(x) = Cg(x)$, where C represents a constant, then $f'(x) = \underline{Cg'(x)}$.
4. If $f(x) = C$, where C represents a constant, then $f'(x) = \underline{0}$.

Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) =$ ________________

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

Complete each of the following 'rules of differentiation'.

1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) =$ ________________

$f(x) = 2x^3$

Find the derivative of each term.

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12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) =$ ________________

$f(x) = 2x^3 + 7x^2$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) =$ ________________

$f(x) = 2x^3 + 7x^2 - 21x$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) =$ ________________

$f(x) = 2x^3 + 7x^2 - 21x + 9$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) = \underline{2(\qquad\qquad}$

$f(x) = 2x^3 + 7x^2 - 21x + 9$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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1. If $f(x) = x^n$, then $f'(x) = \underline{n x^{(n-1)}}$.
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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) = \underline{2(3x^2)\qquad\qquad}$

$f(x) = 2x^3 + 7x^2 - 21x + 9$

Find the derivative of each term.

Calculus Class Worksheet #2 Unit 1 Rules of Differentiation

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Use the rules of differentiation to find the derivative of each of the following functions. If a function is not given in polynomial form, then you should first write the function in polynomial form and then find its derivative.

12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) = \underline{6x^2 \qquad\qquad}$

$f(x) = 2x^3 + 7x^2 - 21x + 9$

Find the derivative of each term.

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Find the derivative of each term.

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12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) = \underline{6x^2 + 7(\qquad}$

$f(x) = 2x^3 + 7x^2 - 21x + 9$

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12. $f(x) = (2x - 3)(x^2 + 5x - 3)$ $f'(x) = \underline{6x^2 + 14x}$

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Find the derivative of each term.

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Good luck on your homework !!

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$f(x) = 2x^3 + 7x^2 - 21x + 9$

Find the derivative of each term.