

AP[®] Calculus

Basic Derivatives

Halloween-Themed



B

Select values of f, g and their derivatives shown in the table.
Let $h(x) = (3f(x) + 4)(g(x) - 2)$.

x	$f(x)$	$f'(x)$	$g(x)$
1	4	-3	-



N

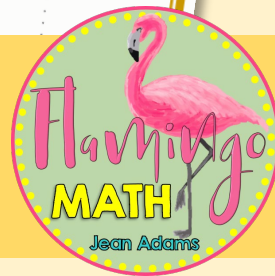
Previous Answer:
-80

Previous Answer:
{-4, 12}

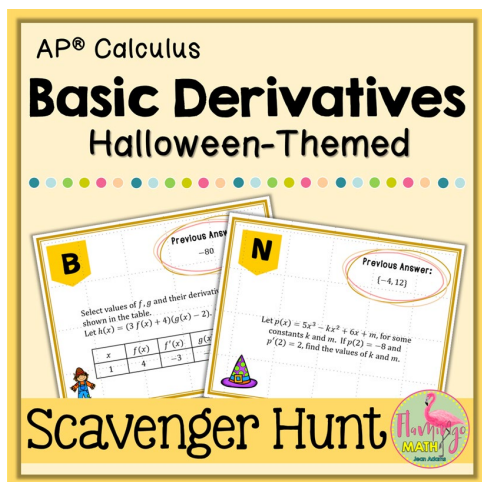
Let $p(x) = 5x^3 - kx^2 + 6x + m$, for some constants k and m . If $p(2) = -8$ and $p'(2) = 2$, find the values of k and m .



Scavenger Hunt



Basic Derivatives Scavenger Hunt Task Cards



KEY CONCEPTS/TOPICS:

1. Finding derivatives using basic differentiation rules.
2. Find the equation of a tangent line.

GENERAL DIRECTIONS:

Students work through the scavenger hunt in a self-checking activity

About The Product

Basic Derivative Rules Scavenger Hunt

This activity is designed to help your AP® Calculus students review key concepts for the topics in Unit 2 on Basic Derivative Rules. There are 16 cards in the set. A student recording sheet is also included.

Students should work cooperatively, without the aid of a graphing calculator. Each task card will cover the topics for differentiation using the Power Rule, Product Rule and Quotient Rule.

Preparation

1. Copy a student recording sheet for each student or group.
2. Copy a set of task cards for each group. If you copy on card stock, you can cut them apart, and laminate for durability.

Product Pages

www.FlamingoMath.com

A

Previous Answer: $\frac{4}{x} + \frac{3}{\sqrt{x^5}}$

Find the derivative of f :
 $f(x) = \ln\left(\frac{x^2}{e^{2x}}\right)$



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B

Previous Answer: -80

Select values of f, g and their derivatives are shown in the table.
 Let $h(x) = (3f(x) + 4)(g(x) - 2)$. Find $h'(1)$.

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	4	-2	3	5



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C

Previous Answer: $y = 4x - 5$

Let $f(x) = 2x - 3$ and $g(x) = 3x + 4$.
 If $h(x) = \frac{f(x)}{g(x)}$, find $h'(x)$.



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D

Find the value of $h(x) = x^2$ so that $h(2) =$



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E

Previous Answer: $\frac{19}{25}$

Suppose u and v are functions of x that are differentiable at $x = 1$, and that $u(1) = 5, u'(1) = -2, v(1) = -3$, and $v'(1) = 4$. Find the values of the derivatives at $x = 1$.

$\frac{d}{dx}[4uv - 3v]$



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F

Previous Answer: (1, 7)

Use the product rule to find $f'(x)$:
 $f(x) = (x^2 + 2x)(x + 1)$



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G

Previous Answer: $-\frac{13}{(2x - 3)^2}$

Find $g'(1)$ given:
 $g^2 - x^{\frac{3}{2}} + 5$

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H

Previous Answer: 84

Find k so that $f(x) = x^2 + kx$ is tangent to $y = 4x - 16$.



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I

Previous Answer: $\frac{2}{x} - 2$

Find y' given:
 $y = 3 \tan(x) + 2 \cos(x) - \ln(e^{2x})$



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J

Previous Answer: $\{-16, 4\}$

Let $f(x) = x + 3$ and let g be a function such that $g'(x) = 4$ for all x .
 If $h(x) = \frac{g(x)}{f(x)}$ where $h'(x) = \frac{17}{(x+3)^2}$, write an equation for $h(x)$.



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K

Previous Answer: $\frac{13}{6}$

Let $h(x) = 8x^3 - 2x^5 + 3$, find $h''(1)$.



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L

Previous Answer: 92

Differentiate $y = \ln(\pi x^4) - \frac{2}{\sqrt{x^2}}$



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M

Use the quotient rule to find $f'(x) = \frac{3}{2}$



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N

Previous Answer: $\{-4, 12\}$

Let $p(x) = 5x^3 - kx^2 + 6x + m$, for some constants k and m . If $p(2) = -8$ and $p'(2) = 2$, find the values of k and m .



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O

Previous Answer: $\frac{17}{(3x + 4)^2}$

Select values of f, g and their derivatives are shown in the table.
 Let $j(x) = \frac{2g(x)-3}{f(x)+2}$. Find $j'(-1)$.

x	$f(x)$	$g(x)$	$f'(x)$	$g'(x)$
-1	3	-2	-3	4



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P

Previous Answer: $3 \sec^2(x) - 2 \sin(x) - 2$

Find the point(s) on the graph of $g(x)$ where the tangent line is horizontal.
 $g(x) = 5x^{-2} + 10x - 8$



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Q

Previous Answer: $\frac{17}{(3x + 4)^2}$

Select values of f, g and their derivatives are shown in the table.
 Let $j(x) = \frac{2g(x)-3}{f(x)+2}$. Find $j'(-1)$.

x	$f(x)$	$g(x)$	$f'(x)$	$g'(x)$
-1	3	-2	-3	4



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R

Previous Answer: $\frac{17}{(3x + 4)^2}$

Select values of f, g and their derivatives are shown in the table.
 Let $j(x) = \frac{2g(x)-3}{f(x)+2}$. Find $j'(-1)$.

x	$f(x)$	$g(x)$	$f'(x)$	$g'(x)$
-1	3	-2	-3	4



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Students love Riddles!