Name

Derivative Rules - Product Rule Negative Fractional Powers as Radical (with Rule) to Derivative

1 Find the derivative f'(x) using the product rule.

if $h(x) = f(x)\,g(x),\ h'(x) = f'(x)\,g(x) + f(x)\,g'(x)$

$f(x) = (\frac{3}{\sqrt[3]{x}} - 6)(5x)$

A	$f'(x) = (-x^{-\frac{4}{3}})(5)$	B	$f'(x) = (-x^{-\frac{4}{3}})(5x) + (3x^{-\frac{1}{3}} - 6)(5)$
C	$f'(x) = (-x^{-\frac{4}{3}})(5x)$	D	$f'(x) = (-x^{-\frac{4}{3}})(5x) - (3x^{-\frac{1}{3}} - 6)(5)$

2 Find the derivative f'(x) using the product rule.

if $h(x) = f(x)\,g(x),\ h'(x) = f'(x)\,g(x) + f(x)\,g'(x)$

$f(x) = (-\frac{5}{\sqrt[3]{x^2}} - 4)(-4x^2 - 7)$

A	$f'(x) = (\frac{10}{3}x^{-\frac{5}{3}})(-4x^2 - 7) - (-5x^{-\frac{2}{3}} - 4)(-8x)$	B	$f'(x) = (\frac{10}{3}x^{-\frac{5}{3}})(-4x^2 - 7) + (-5x^{-\frac{2}{3}} - 4)(-8x)$
C	$f'(x) = (\frac{10}{3}x^{-\frac{5}{3}})(-8x)$	D	$f'(x) = (\frac{10}{3}x^{-\frac{5}{3}})(-4x^2 - 7)$

3 Find the derivative f'(x) using the product rule.

if $h(x) = f(x)\,g(x),\ h'(x) = f'(x)\,g(x) + f(x)\,g'(x)$

$f(x) = (\frac{4}{\sqrt[3]{x^4}} - 6)(-4x)$

A	$f'(x) = (-\frac{16}{3}x^{-\frac{7}{3}})(-4x) + (4x^{-\frac{4}{3}} - 6)(-4)$	B	$f'(x) = (-\frac{16}{3}x^{-\frac{7}{3}})(-4x)$
C	$f'(x) = (-\frac{16}{3}x^{-\frac{7}{3}})(-4x) - (4x^{-\frac{4}{3}} - 6)(-4)$	D	$f'(x) = (-\frac{16}{3}x^{-\frac{7}{3}})(-4)$

4 Find the derivative f'(x) using the product rule.

if $h(x) = f(x)\,g(x),\ h'(x) = f'(x)\,g(x) + f(x)\,g'(x)$

$f(x) = (\frac{2}{\sqrt{x^3}} - 4)(-5x + 6)$

A	$f'(x) = (-3x^{-\frac{5}{2}})(-5x + 6) - (2x^{-\frac{3}{2}} - 4)(-5)$	B	$f'(x) = (-3x^{-\frac{5}{2}})(-5x + 6)$
C	$f'(x) = (-3x^{-\frac{5}{2}})(-5x + 6) + (2x^{-\frac{3}{2}} - 4)(-5)$	D	$f'(x) = (-3x^{-\frac{5}{2}})(-5)$

5 Find the derivative f'(x) using the product rule.

if $h(x) = f(x)\,g(x),\ h'(x) = f'(x)\,g(x) + f(x)\,g'(x)$

$f(x) = (\frac{5}{\sqrt[3]{x^4}} + 2)(5x)$

A	$f'(x) = (-\frac{20}{3}x^{-\frac{7}{3}})(5)$	B	$f'(x) = (-\frac{20}{3}x^{-\frac{7}{3}})(5x) + (5x^{-\frac{4}{3}} + 2)(5)$
C	$f'(x) = (-\frac{20}{3}x^{-\frac{7}{3}})(5x)$	D	$f'(x) = (-\frac{20}{3}x^{-\frac{7}{3}})(5x) - (5x^{-\frac{4}{3}} + 2)(5)$

6 Find the derivative f'(x) using the product rule.

if $h(x) = f(x)\,g(x),\ h'(x) = f'(x)\,g(x) + f(x)\,g'(x)$

$f(x) = (-\frac{4}{\sqrt[3]{x^4}} - 4)(-2x - 5)$

A	$f'(x) = (\frac{16}{3}x^{-\frac{7}{3}})(-2x - 5) + (-4x^{-\frac{4}{3}} - 4)(-2)$	B	$f'(x) = (\frac{16}{3}x^{-\frac{7}{3}})(-2x - 5)$
C	$f'(x) = (\frac{16}{3}x^{-\frac{7}{3}})(-2x - 5) - (-4x^{-\frac{4}{3}} - 4)(-2)$	D	$f'(x) = (\frac{16}{3}x^{-\frac{7}{3}})(-2)$

7 Find the derivative f'(x) using the product rule.

if $h(x) = f(x)\,g(x),\ h'(x) = f'(x)\,g(x) + f(x)\,g'(x)$

$f(x) = (-\frac{5}{\sqrt{x}} - 3)(3x^2)$

A	$f'(x) = (\frac{5}{2}x^{-\frac{3}{2}})(3x^2) - (-5x^{-\frac{1}{2}} - 3)(6x)$	B	$f'(x) = (\frac{5}{2}x^{-\frac{3}{2}})(3x^2)$
C	$f'(x) = (\frac{5}{2}x^{-\frac{3}{2}})(3x^2) + (-5x^{-\frac{1}{2}} - 3)(6x)$	D	$f'(x) = (\frac{5}{2}x^{-\frac{3}{2}})(6x)$

8 Find the derivative f'(x) using the product rule.

if $h(x) = f(x)\,g(x),\ h'(x) = f'(x)\,g(x) + f(x)\,g'(x)$

$f(x) = (-\frac{4}{\sqrt[3]{x}} - 6)(-2x)$

A	$f'(x) = (\frac{4}{3}x^{-\frac{4}{3}})(-2x)$	B	$f'(x) = (\frac{4}{3}x^{-\frac{4}{3}})(-2x) + (-4x^{-\frac{1}{3}} - 6)(-2)$
C	$f'(x) = (\frac{4}{3}x^{-\frac{4}{3}})(-2)$	D	$f'(x) = (\frac{4}{3}x^{-\frac{4}{3}})(-2x) - (-4x^{-\frac{1}{3}} - 6)(-2)$