Example

Let $f(x) = 1 - x^2$ and let $g(x) = \sqrt{x}$.

Find $f(g(x))$ and $g(f(x))$ and their domains.

Examples

Use the chain rule to find the following derivatives.

(a) $f(x) = (x^2 + 1)^2$

(b) $g(x) = (2x + 5)^{42}$

(c) $h(x) = \sqrt{1 - x^2}$

More Examples

Use the chain rule to find the following derivatives.

(a) $f(x) = \sqrt{x^2(x+3)}$

(b) $g(x) = \dfrac{1}{(3x-1)^3}$

(c) $h(x) = \sqrt{\dfrac{x-1}{x+1}}$

(d) $y = 2x(5x^2 - 1)$

(e) $s(t) = \dfrac{(2t+1)^{11}}{2t-1}$

(f) $R = \sqrt{(x^2+1)\sqrt{(x^2+1)}}$