

Example 4 Evaluating Functions

$$f(x) = 2x^3 + 3x - 4$$

$$g(x) = 2x + 6$$

$$(f+g)(2) =$$

$$(f-g)(-1) =$$

$$(f \cdot g)(3) =$$

$$\left(\frac{f}{g}\right)(-2) =$$

Operations with Functions

Function:

Domain:

Range:

Example 3 Operations with Rational Exponent Form

$$f(x) = 10x^{1/2} \quad g(x) = 5x^{1/2}$$

Sum $(f+g)(x) = f(x) + g(x)$
 Product $(f \cdot g)(x) = f(x) \cdot g(x)$

Difference $(f-g)(x) = f(x) - g(x)$
 Quotient $\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}$

Example 1 Operations with Polynomial Functions

$$f(x) = x^2 - 4 \quad g(x) = 3x + 1$$

Sum $(f+g)(x) = f(x) + g(x)$

Product $(f \cdot g)(x) = f(x) \cdot g(x)$

Difference $(f-g)(x) = f(x) - g(x)$

Quotient $\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}$

Example 2 Operations with Radical Functions

$$f(x) = 5\sqrt{2x+1} \quad g(x) = 3\sqrt{2x-1}$$

Sum $(f+g)(x) = f(x) + g(x)$
 Product $(f \cdot g)(x) = f(x) \cdot g(x)$

Difference $(f-g)(x) = f(x) - g(x)$
 Quotient $\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}$