Topic: Classifying functions

Question: Classify the function as specifically as possible.

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

Answer choices:

A Polynomial

B Quadratic

C Root

D Rational

Solution: D

The expression $x^2 + 3x - 5$ is a polynomial and so is $x + 4$.

The overall function $f(x)$ though, is a ratio of these two polynomials.

That makes $f(x)$ a rational function.

Topic: Classifying functions

Question: Classify the function as specifically as possible.

$$g(x) = x^{-1}$$

Answer choices:

A Polynomial

B Power

C Reciprocal

D Rational

Solution: C

The expression x^{-1} shows x raised to a power, which makes it a power function.

But more specifically, the -1 exponent means the function can be rewritten as

$$g(x) = \frac{1}{x}$$

which makes it a reciprocal function.