

Algebra 2
Unit: Rational Functions
Section: Domain and Range of Rational Functions

Avatar: Domain and Range of a Rational Function

Slide 1:

Hey. I heard you were able to help Sophia with some work a couple weeks back. Could you help me with this domain and range question?

Slide 2:

The assignment asks me to find the domain and range of the function f of x is equal to one divided by the quantity x plus four minus two. I know we need to find where the functions have excluded values. I think that this has to do with vertical and horizontal translation. Is that right?

Slide 3:

So let's write down what we know. The graph has horizontal shift of four units to the left and a vertical shift of two units down.

Slide 4:

I think using this information we can find the domain and range, right? We know that there is a horizontal shift of four units to the left. That means there is an asymptote at x is equal to negative four so the domain is all real numbers except x is equal to four. We know that there is a vertical shift of 2 units down. That means there is an asymptote at y is equal to negative two. This is an excluded value so the range is all real number except $y = -2$.

Thanks so much for your help. It was great talking this problem through with someone.