

8A Review Day 2

A geometric sequence has common ratio -6 and first term -1.5 . Write explicit and recursive rules for this sequence.

Determine the y -intercept of the following functions. Use your brain.

$$f(x) = \sqrt{x + 5}$$

$$g(x) = \frac{1}{x+1} + \frac{1}{x^2} + 8$$

$$h(x) = 22 \cdot \left(\frac{2}{3}\right)^x$$

Write the equation for any function that has a horizontal asymptote of $y = 0$.

Write the equation for any function that has a vertical asymptote of $x = 4$.

A function's domain and range are listed below in interval notation. Write them in set notation.

Domain: $[-6, \infty)$

Range: $[2, 3]$

A function's domain and range are listed below in set notation. Write them in interval notation.

Domain: $\{x \in \mathbb{R} \mid -13 < x < 0\}$

Range: $\{y \in \mathbb{R} \mid y \leq 101\}$

What sorts of situations should be modeled using discrete functions? What sorts of situations should be modeled using continuous functions?

In order to make 2017 the best year of his life, Mr. Carlson decides to stop bathing in nuclear waste. Unfortunately, years of exposure to radioactive particles have left 384.4 grams of Strontium-90 within MC's body. As you well know, this isotope has a half-life of 28.8 years.

Write an equation for a function that models the amount of Strontium-90 remaining after x years.

Sketch a graph of the function.

What are the function's Domain and Range?

What are the function's x - and y -intercepts?

What is the function's End Behavior?

How much Strontium-90 will be left after 1 year?

When will less than 100 grams of Strontium-90 remain?