

Domain and Range Quiz PDF

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What is the range of the function $f(x) = \sqrt{x}$?

- $(-\infty, \infty)$
- $[0, \infty)$
- $(-\infty, 0]$
- $[0, 1]$

Which of the following functions has a range of all real numbers?

- $f(x) = x^2$
- $f(x) = x^3$
- $f(x) = \sqrt{x}$
- $f(x) = 1/x$

Which functions have a range of $(0, \infty)$? (Select all that apply)

- $f(x) = e^x$
- $f(x) = \ln(x)$
- $f(x) = x^2 + 1$
- $f(x) = 1/x$

For the function $f(x) = \sin(x)$, what is the range?

- $(-\infty, \infty)$
- $[0, 1]$
- $[-1, 1]$
- $(0, \infty)$

What is the range of the function $f(x) = e^x$?

- $(-\infty, \infty)$
- $[0, \infty)$

- $(0, \infty)$
- $[-1, 1]$

Which of the following describes the domain of $f(x) = \ln(x)$?

- $(-\infty, \infty)$
- $(0, \infty)$
- $[0, \infty)$
- $(-\infty, 0]$

What is the domain of the function $f(x) = 1/(x-2)$?

- $(-\infty, \infty)$
- $(-\infty, 2) \cup (2, \infty)$
- $[2, \infty)$
- $(2, \infty)$

Which of the following are true about the function $f(x) = \cos(x)$? (Select all that apply)

- Domain is all real numbers
- Range is $[-1, 1]$
- It is a periodic function
- It has vertical asymptotes

Which of the following functions have a domain of all real numbers? (Select all that apply)

- $f(x) = x^2 + 3x + 2$
- $f(x) = 1/(x-1)$
- $f(x) = \sin(x)$
- $f(x) = \sqrt{x}$

Explain how to determine the domain of a rational function.

Describe the process of finding the range of a quadratic function.

What is the significance of the vertical line test in relation to domain and range?

How does the concept of asymptotes affect the domain and range of a function?

Provide an example of a piecewise function and explain how to determine its domain and range.

Discuss how the domain and range of a function are affected when it is composed with another function.

For the function $f(x) = 1/(x^2 - 1)$, which values are excluded from the domain? (Select all that apply)

- $x = 0$
- $x = 1$
- $x = -1$
- $x = 2$

Which of the following functions has a domain of all real numbers?

- $f(x) = 1/x$
- $f(x) = \ln(x)$
- $f(x) = x^3$
- $f(x) = \sqrt{x}$

What is the domain of the function $f(x) = x^2$?

- $(-\infty, \infty)$
- $[0, \infty)$
- $(-\infty, 0]$
- $[0, 1]$

Which of the following functions have restricted domains due to division by zero? (Select all that apply)

- $f(x) = 1/x$
- $f(x) = 1/(x-2)$
- $f(x) = x^2$
- $f(x) = (x+1)/(x^2-4)$

Which of the following functions have a range of $[0, \infty)$? (Select all that apply)

- $f(x) = x^2$
- $f(x) = \sqrt{x}$
- $f(x) = e^x$
- $f(x) = |x|$