Section 2.4: Functions

Key Topics: relation, function, domain, range, function notation, vertical line test

Function

A _____ from a set X to a set Y is a rule that assigns to each element of X exactly one element of Y. The set X is the _____ of the function. The set of those elements of Y that correspond (are assigned) to the elements of X is the _____ of the function.

In writing $y = f(x)$, do not confuse f, which is the name of the function, with $f(x)$, which is a number in the range of f that the function assigns to x.
The symbol $f(x)$ does not mean "_____."

Find the domain of $f(x) = \dfrac{4}{\sqrt{x^2 - 25}}$

Describe the range of $f(x) = \dfrac{4}{\sqrt{x^2 - 25}}$

Vertical-Line Test

If _____ line intersects the graph of a relation at _____, then the graph of the relation is the graph of a function.

Which of the following is a point on the graph of $y = f(x) = x^2 - 3x + 5$?

(a) $(-2, 7)$
(b) $(-2, 15)$
(c) $(-2, 3)$
(d) $(-2, -5)$