

CONTINUOUS

DEFINITION: A set of data is said to be **continuous** if the values belonging to the set

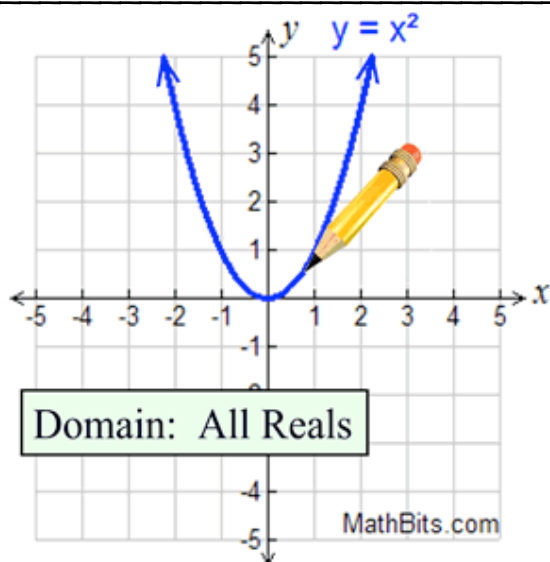
EXAMPLES:

- The height of a horse (could be any value within the range of horse heights).
- Time to complete a task (which could be measured to fractions of seconds).
- The outdoor temperature at noon (any value within possible temperatures ranges.)
- The speed of a car on White Oak Rd (assuming legal speed limits).

Note: Continuous data

FUNCTION: In the graph of a continuous function, _____, since every point has meaning to the original problem.

GRAPH: _____



discrete

DEFINITION: A set of data is said to be **discrete** if the values belonging to the set

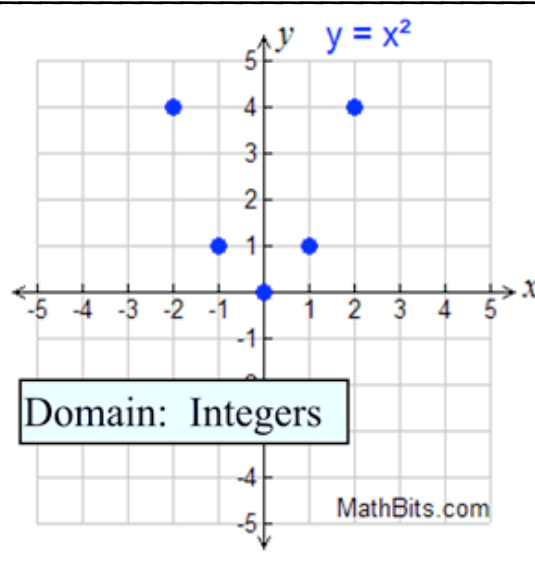
EXAMPLES:

- The number of people in your class (no fractional parts of a person).
- The number of TV sets in a home (no fractional parts of a TV set).
- The number of puppies in a litter (no fractional puppies).
- The number of questions on a math test (no incomplete questions).

Note: Discrete data

FUNCTION: In the graph of a discrete function, _____, and only these points have meaning to the original problem.

GRAPH: _____



domain: a set of input values consisting of _____

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IN PLAIN ENGLISH: A continuous function allows the x-values to be _____

IN PLAIN ENGLISH: A discrete function allows the x-values to be _____

^aWhy do we care? When graphing a function, especially one related to a real-world situation, it is important to choose an appropriate domain (x-values) for the graph. For example, if a function represents the number of people left on an island at the end of each week in the **Survivor Game**, an appropriate domain would be positive integers. Hopefully, half of a person is not an appropriate answer for any of the weeks. The graph of the people remaining on the island would be a discrete graph, not a continuous graph.

discrete vs. continuous functions

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From working with statistics, we know that data can be numerical (quantitative) or descriptive (qualitative). When data is numerical, it can also be discrete or continuous.