3.3 Notes. Get glue-in from Mrs. Izatt

For each graph, sketch it in your notebook determine if the relationship represents a function, and if so, state the key features of the function (intervals where the function is increasing or decreasing, the maximum or minimum value of the function, domain and range, x and y intercepts, etc.)

1.

2.

3.

4.

5.

6.

7.

3.3 Features of Functions

Learning Targets -

Identify key features of functions

Functions vs. non-functions

Function — A relationship in which each input has exactly one output.

1. Continuous
Domain [-3, 4]
Range [0, 4]
Inc. [-3, 1]
Dec. [1, 4]
Constant — none
min — (4, 0)
max — (1, 4)
x int — (4, 0)
y int — (0, 3.2)

2. Not a function

3. Continuous
Domain [-8, 10]
Range [-3, 5]
Inc. [-8, 0] [5.5, 10]
Dec. [0, 5.5]
min (-8, -3)   max (10, 5)
x int (-6.2, 0)   y int (0, 4.2)

4. Discrete
Domain — {.5, 1, 2, 3, 4}
Range —   {.25, .5, 1, 2, 3}
Decreasing over the whole domain
min — (4, .25)   max (.5, 3)
no x or y intercept

5. Not a function
Two outputs at
x = -9 and x = 5

6. Continuous
Domain — [-2, ∞)   min (-2, -7)
Range — [-7, ∞)   no max
Inc. — [-2, ∞)   y int (0, -1)   x int — (.5, 0)

Intervals
Brackets → Includes the
number
(closed circle)
Parantheses → Doesn't include
the number
(open circle & infinities)

7. Discontinuous
Domain [0, 21]
Range [-3, 10]
Inc. (6, 8] [18, 21]
Decreasing [0, 6] [8, 18]
Min (18, -3)
Max (0, 10)
x-int - (17, 0) (21, 0)
y-int - (0, 10)