Domain and Range Basics

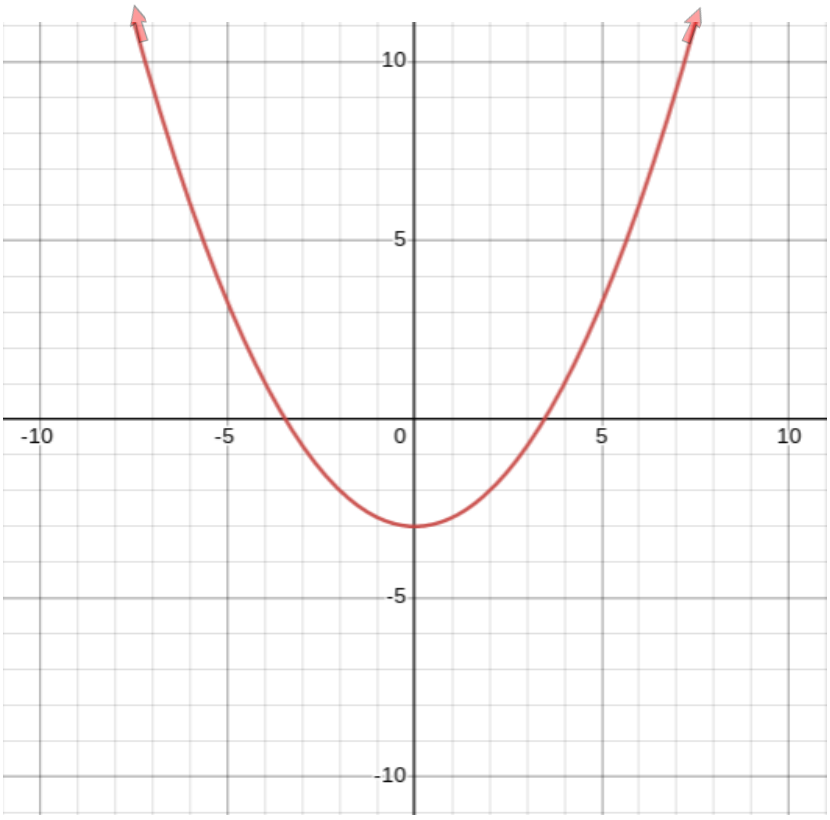
To find Domain use the vertical line trick.

1. Moving from left to right, find the lowest x value. Write it down
2. Find the highest x value, and write it down, separated by a comma
3. Lastly determine whether both values are included or not*

To find Range use the horizontal line trick.

1. Moving from bottom to top, find the y-value. Write it down
2. Find the highest y value, and write it down, separated by a comma
3. Lastly determine whether both values are included or not*

*Remember when using interval notation if the value is included use brackets [ ], and if the value isn't included use parentheses ( ).



Domain and Range for function above

Domain: $(-\infty,+\infty)$

Range: $[-3,+\infty)$

REMEMBER:

Domain refers to all of the values (x-values) you can put into your function/equation.
Range refers to all of the values (y-values) that come out of your equation/function.

- Also if the value is included use **brackets** [ ], if the value isn't Included use **parentheses** ( ) when using interval notation.

WORTHY TO NOTE:

- Infinity can never be included, since it isn't a number but a concept, therefore when writing infinity use a parenthesis.
- This isn't the only possible way to write domain and range. They can also be written as (__<x<__).
- $(-\infty,+\infty)$ is also sometimes written as "all real numbers".

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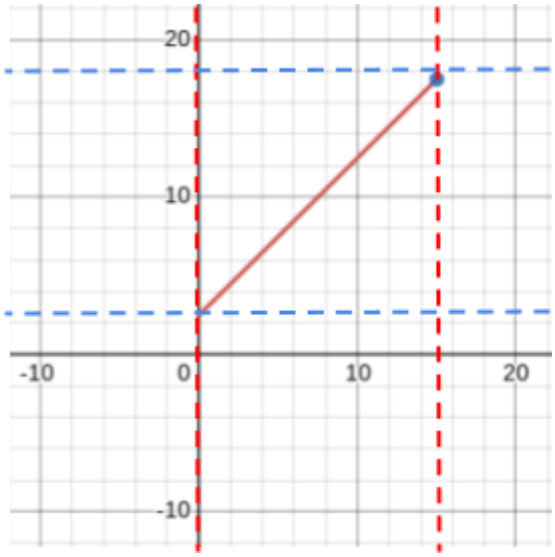
Examples

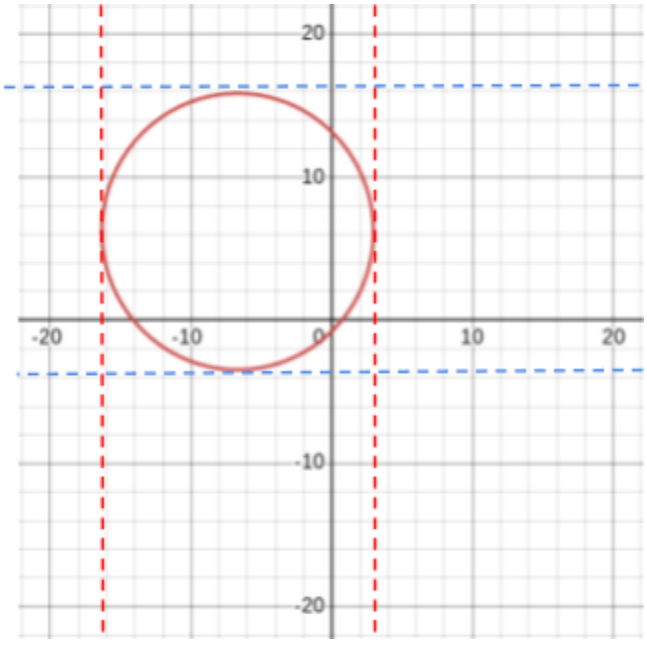
SUMMARY

1. Plot the function
2. Draw vertical line from left
3. Note the lowest x-value/lowest y-value
4. Move line right/up and note highest x-value/ highest y-value
5. Domain is the x-values between the noted values & Range is the y-values between the noted numbers



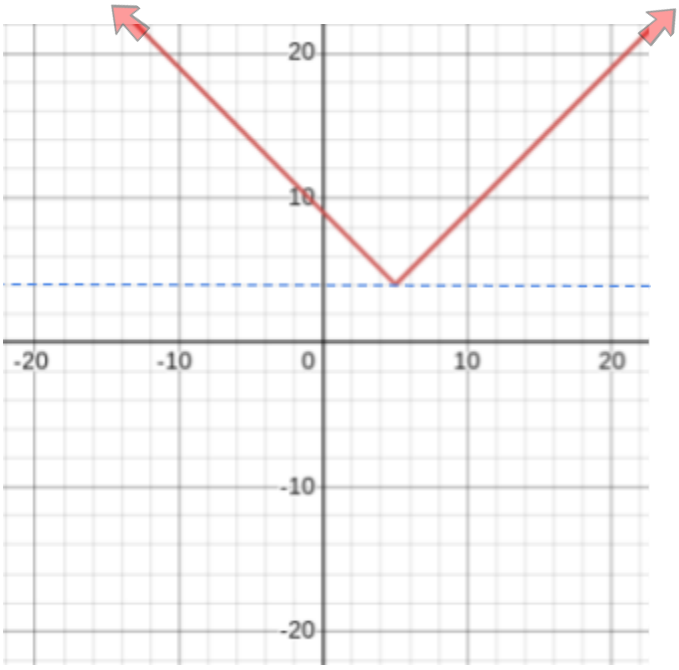
*function

Domain: [0 , 15]
Range: [2.5 , 17.5]



*not a function

Domain: [-16 , 3]
Range: [-3.5 , 16]



*function

Domain: All real numbers or (-∞, +∞)
Range: [4, +∞)

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