

August 25, 2025

Kiss and Make up Day

Today in History:

The Great Moon Hoax (1835)

The *Wizard of Oz* debuts (1939)

Number of the Day: 48

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

48 is the smallest number to have ten different factors:

1, 2, 3, 4, 6, 8, 12, 16, 24, and 48.

Fun Fact:

Franklin Mars invented the Snickers Bar in 1930.

Quote of the Day:

"I love Mickey Mouse more than any woman I have ever known."

-Walt Disney

Today's Weather:

Cloudy slight chance of rain in the morning, high near 68°.

MATH 121

CHRIS BUTLER

SEARS 577

SEARS 540 (SI ROOM)

CHRIS @ CASE.EDU

216-368-2881

OFFICE HOURS

MWF 10:30 - 11:30

1-4

NUMBERS

REAL

RATIONAL

$$\frac{p}{q}$$

IRRATIONAL

ABSOLUTE VALUE

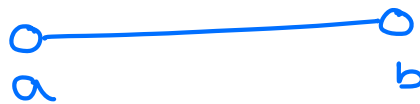
$$|a| = \begin{cases} a & a \geq 0 \\ -a & a < 0 \end{cases}$$

$$\sqrt{a} > 0$$


$$\sqrt{a^2} = |a|$$

INTERVALS


OPEN


$$a < x < b$$


CLOSED


$$a \leq x \leq b$$

HALF - OPEN

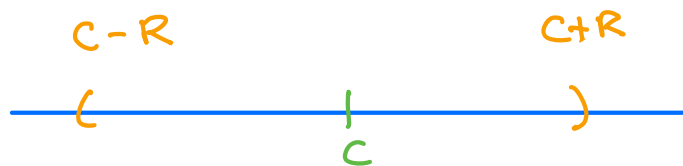
$$a < x \leq b$$


HALF - CLOSED


$$a \leq x < b$$

INEQ. $|x - c| < R$

DIST BETWEEN x & c IS LESS THAN R



EXAMPLE $|x - 3| < 2$

$$-2 < x - 3 < 2$$

$$1 < x < 5$$

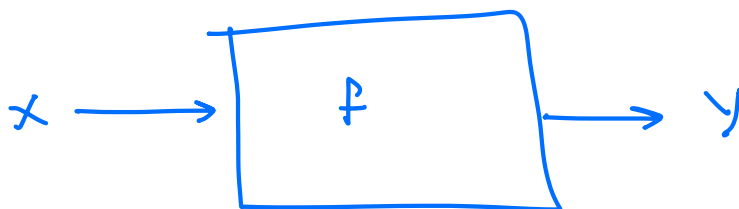
DISTANCE FORMULA

$$(x_1, y_1) \quad (x_2, y_2)$$

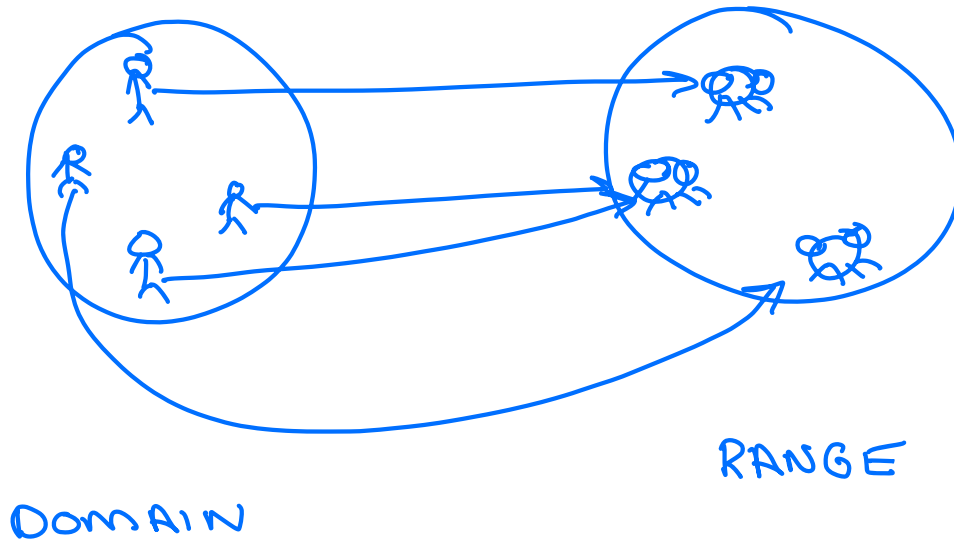
$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

FUNCTIONS

$$y = f(x)$$



RELAT.



NATURAL DOMAIN

$$f(x) = \frac{1}{x+1} \quad x \neq -1$$

$$f(x) = \sqrt{x+2} \quad x \geq -2$$

LINE S

$$y = mx + b$$

m IS SLOPE

b IS Y-INT

QUAD

$$y = ax^2 + bx + c$$

ROOT

$$ax^2 + bx + c = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

COMPLETE SQUARE