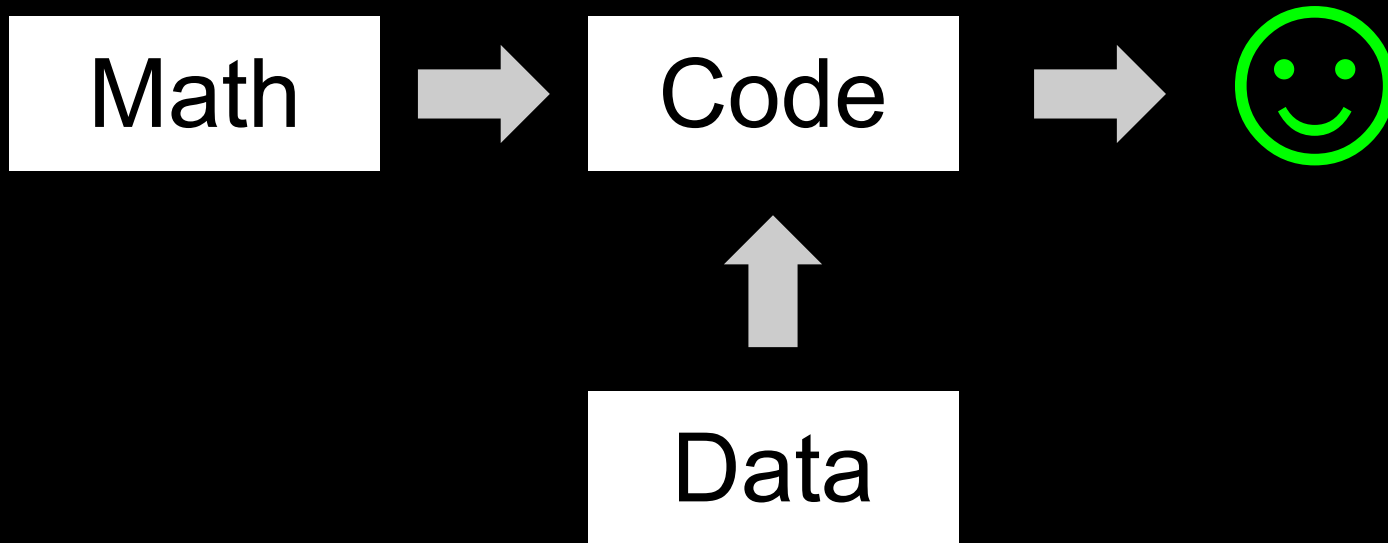


What the Float?

And what are we planning to do about it?

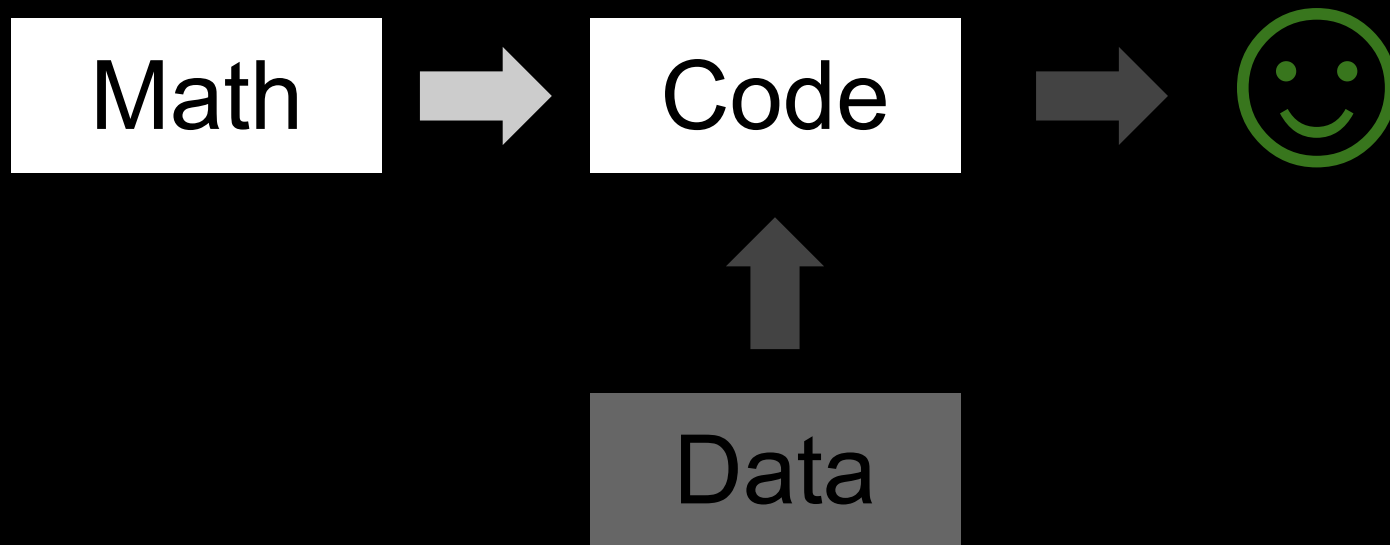
The logo for CaSo, featuring the letters 'C', 'a', 'S', and 'o' in a stylized, rounded font. The 'C' is magenta, the 'a' is lime green, the 'S' is orange, and the 'o' is cyan. A purple horizontal bar is positioned below the 'o'.

Science (High-level Summary)



CasO

Science (High-level Summary)



CaS_o

Math versus Computers

$$f(x) = \sqrt{x+1} - \sqrt{x}$$

CaSo

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$$f(3141592653589793) == 7.451\text{e-}9$$

Casio

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Casio

$$\begin{aligned}\sqrt{x+1} - \sqrt{x} &= (\sqrt{x+1} - \sqrt{x}) \frac{\sqrt{x+1} + \sqrt{x}}{\sqrt{x+1} + \sqrt{x}} \\ &= \frac{\sqrt{x+1}^2 - \sqrt{x}^2}{\sqrt{x+1} + \sqrt{x}} \\ &= \frac{x+1-x}{\sqrt{x+1} + \sqrt{x}} \\ &= \frac{1}{\sqrt{x+1} + \sqrt{x}}\end{aligned}$$



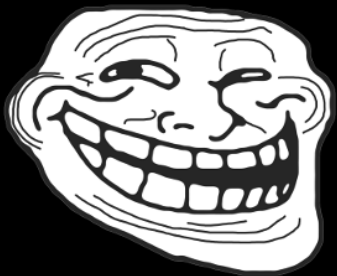
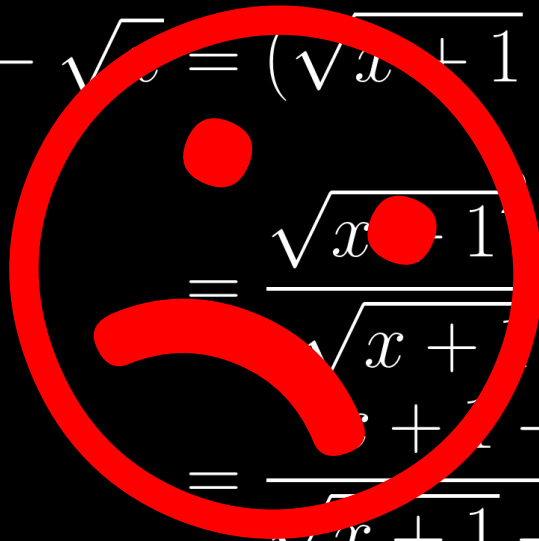
Casio

$$\begin{aligned}\sqrt{x+1} - \sqrt{x} &= (\sqrt{x+1} - \sqrt{x}) \frac{\sqrt{x+1} + \sqrt{x}}{\sqrt{x+1} + \sqrt{x}} \\ &= \frac{\sqrt{x+1}^2 - \sqrt{x}^2}{\sqrt{x+1} + \sqrt{x}} \\ &= \frac{x+1-x}{\sqrt{x+1} + \sqrt{x}} \\ &= \frac{1}{\sqrt{x+1} + \sqrt{x}}\end{aligned}$$



Casio

$$\begin{aligned}
 \sqrt{x+1} - \sqrt{x} &= (\sqrt{x+1} - \sqrt{x}) \frac{\sqrt{x+1} + \sqrt{x}}{\sqrt{x+1} + \sqrt{x}} \\
 &= \frac{\sqrt{x+1} - \sqrt{x} \cdot \sqrt{x+1} + \sqrt{x} \cdot \sqrt{x+1} - \sqrt{x} \cdot \sqrt{x}}{\sqrt{x+1} + \sqrt{x}} \\
 &= \frac{\sqrt{x+1} - x + \sqrt{x} \cdot \sqrt{x+1} - \sqrt{x} \cdot \sqrt{x}}{\sqrt{x+1} + \sqrt{x}} \\
 &= \frac{\sqrt{x+1} - x + \sqrt{x} \cdot \sqrt{x+1} - x}{\sqrt{x+1} + \sqrt{x}} \\
 &= \frac{1}{\sqrt{x+1} + \sqrt{x}}
 \end{aligned}$$

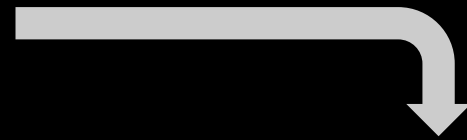


Casio



CaSo

$$\sqrt{x+1} - \sqrt{x}$$



Case

$$1 / (\text{sqrt}(x + 1) + \text{sqrt}(x))$$



$$\frac{e^x - 1}{x}$$

```
if (-3.81e-17 < x < 1.5e-16  
    or x < -.88)  
    exp(x) / x - 1 / x  
else  
    (exp(x) - 1) / log(exp(x))
```

CasO

The diagram features two large, light gray arrows. One arrow starts from the right side of the mathematical expression $\frac{e^x - 1}{x}$ and points downwards and to the right towards the word 'CasO'. The second arrow starts from the right side of the code block and points upwards and to the right towards the word 'CasO'. The word 'CasO' is rendered in a stylized, multi-colored font: 'C' is pink, 'a' is green, 'S' is orange, and 'O' is blue with a purple underline.

$$\frac{e^x - 1}{x}$$

?

Casio

if (-3.81e-17 < x < 1.5e-16
or x < -.88)

exp(x) / x - 1 / x

else

(exp(x) - 1) / log(exp(x))