Evaluación 1.

2. $(S, +, \cdot, ', \emptyset, 2)$

$+ \rightarrow (x+y)\%4$

$\cdot \rightarrow (x \cdot y)/4$

$x' \rightarrow 2 - x.$

- Asociativa → cumple

$(x+y)\%4 = (y+x)\%4$

$(2+\emptyset)\%4 = (\emptyset+2)\%4$

$2\%4 = 2\%4$

$2 = 2$

$(x \cdot y)/4 = (y \cdot x)/4$

$(2 \cdot \emptyset)/4 = (\emptyset \cdot 2)/4$

$\emptyset = \emptyset$

- Conmutativa → cumple

$(x+y)\%4 = (y+x)\%4$

$(2+\emptyset)\%4 = (\emptyset+2)\%4$

$2\%4 = 2\%4$

$2 = 2$

$(x \cdot y)/4 = (y \cdot x)/4$

$(2 \cdot \emptyset)/4 = (\emptyset \cdot 2)/4$

$\emptyset = \emptyset$

- Distributiva cumple por tener solo 2 elementos

- Identidad

$x + \emptyset = x$

$(2+\emptyset)\%4 = 2$ ✓

$y + \emptyset = y$

$(\emptyset+\emptyset)\%4 = \emptyset$ ✓

$x \cdot 1 = x$

$(2 \cdot 1)/4 = 1/2$ x → No cumple la ley identidad por ende no es un algebra booleana.

3. $\text{Senh}(\pi/3)$ Error esperado.= 0,03%

1ra → $\text{Senh}(\frac{\pi}{3}) = \frac{\pi}{3}$

2da → $\text{Senh}(\frac{\pi}{3}) = \frac{\pi}{3} + \frac{(\pi/3)^3}{3!} = 1,2385$

$\%\ \text{error} = \frac{(1,2385 - 1,0471)}{1,2385} \cdot 100 = 15,45\%$

3ra → $\text{Senh}(\frac{\pi}{3})\ \frac{\pi}{3} + \frac{(\pi/3)^3}{3!} + \frac{(\pi/3)^5}{5!} = 1,248994$

$\%\ \text{error} = \frac{(1,2385 - 1,2491)}{1,2385} \cdot 100 = 0,84\ \%$

4ta → $\text{Senh}(\frac{\pi}{3}) = \frac{\pi}{3} + \frac{(\pi/3)^3}{3!} + \frac{(\pi/3)^5}{5!} + \frac{(\pi/3)^7}{7!} = 1,249362$

$\%\ \text{error} = \frac{(1,248994 - 1,249362)}{1,248994} \cdot 100 = 0,0294\ \%$