1er examen parcial

1. Decimal → Binario

$0.15_{10} = 0.00100111001_2$

.15
0.3
0.6
1.2
0.4
0.8
1.6
1.2
0.4
0.8

2. Suma

```
  1 1 0 1 1 0
+ 1 0 0 1 0 0
-------------
1 0 1 1 0 1 0
```

5 Decimal a Binario.

$138_{10} = 10001010_2$

÷	%
69	0
34	1
17	0
8	1
4	0
2	0
1	0
0	1

6. $f(x) = e^x$; $x_0 = 0$

$f(x) = e^x \quad f(0) = 1$
$f'(x) = e^x \quad f'(0) = 1$
$f''(x) = e^x \quad f''(0) = 1$
$f'''(x) = e^x \quad f'''(0) = 1$

$$g(x) = \frac{1}{0!} + \frac{1}{1!}x + \frac{x^2}{2!} + \frac{x^3}{3!}$$
$$= 1 + x + \frac{x^2}{2} + \frac{x^3}{6}$$

$\frac{1}{\sqrt{e}} = e^{\frac{1}{2}} = e^{-1/2}$

$$e^{-\frac{1}{2}} \approx g\left(\frac{-1}{2}\right) = 1 - \frac{1}{2} + \frac{\left(\frac{-1}{2}\right)^2}{2} + \frac{\left(\frac{-1}{2}\right)^3}{6}$$
$$= \frac{1}{2} + \frac{\frac{1}{4}}{2} - \frac{\frac{1}{8}}{6}$$
$$= \frac{1}{2} + \frac{1}{8} - \frac{1}{48}$$
$$= \frac{24}{48} + \frac{6}{48} - \frac{1}{48}$$
$$= \frac{29}{48}$$

7. Resta C_2

$13_{10} = 1101_2$

$-13 = 00001101_{C_2} = 11110011_2$

$15_{10} = 1111_2$

$-13 + 15 = 11110011 + 00001111 = 100000010$ ✗

8. Multiplicación Binaria

$$
\begin{array}{r}
11100 \\
\times\ \ 101 \\
\hline
11100 \\
00000 \\
11100 \\
\hline
10001100
\end{array}
$$