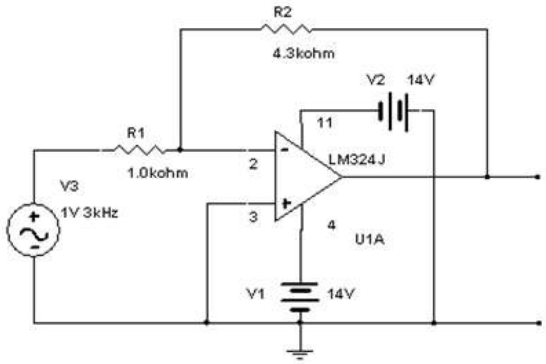
AMPLIFICADORES OPERACIONALES

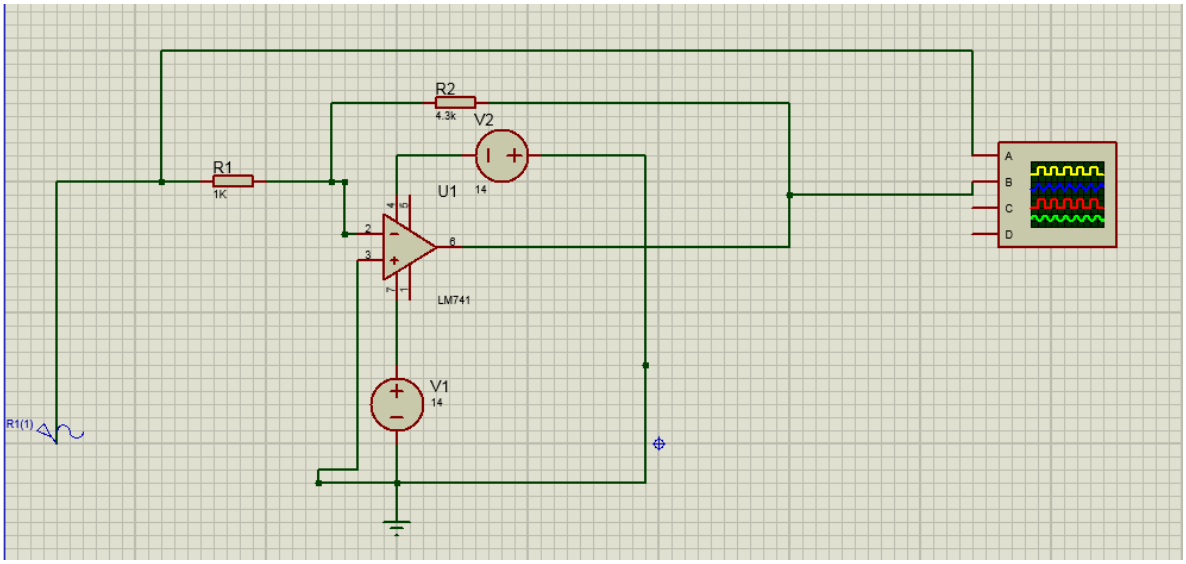
Primer Analisis

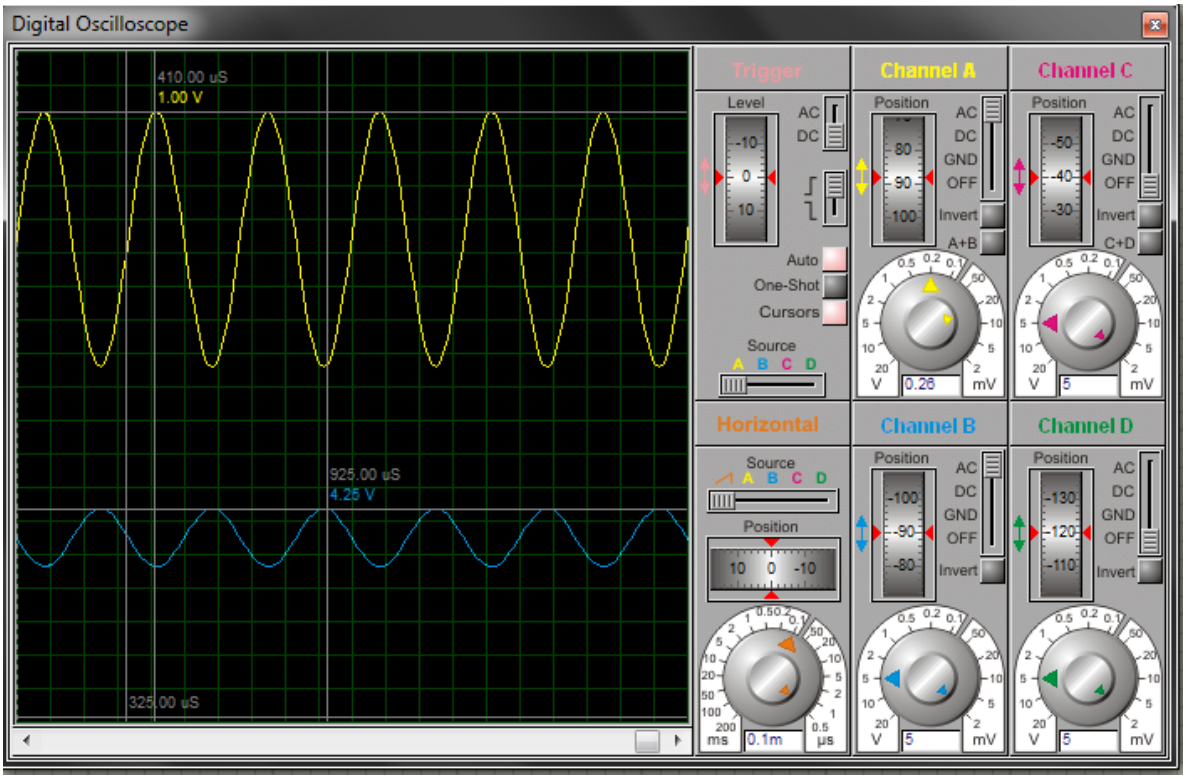
Aplicación de formula de un amplificador inversor



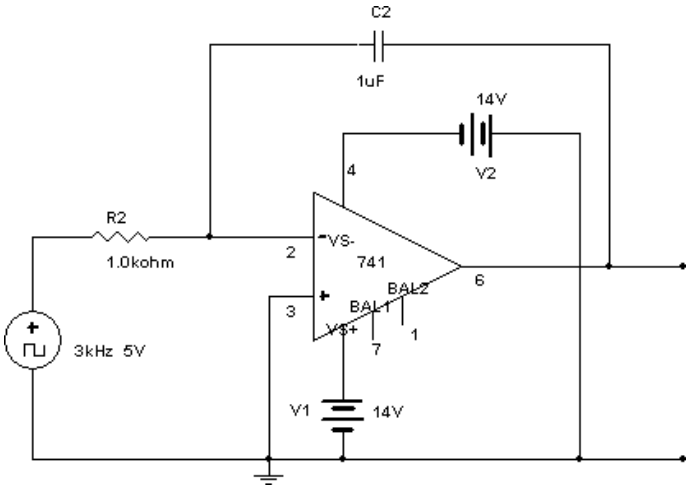
$$V_{out} = -V_{in}\left(\frac{R_2}{R_1}\right)$$

$$V_{out} = -1\left(\frac{4{,}3}{1}\right) = -4.3V$$





Segundo analisis



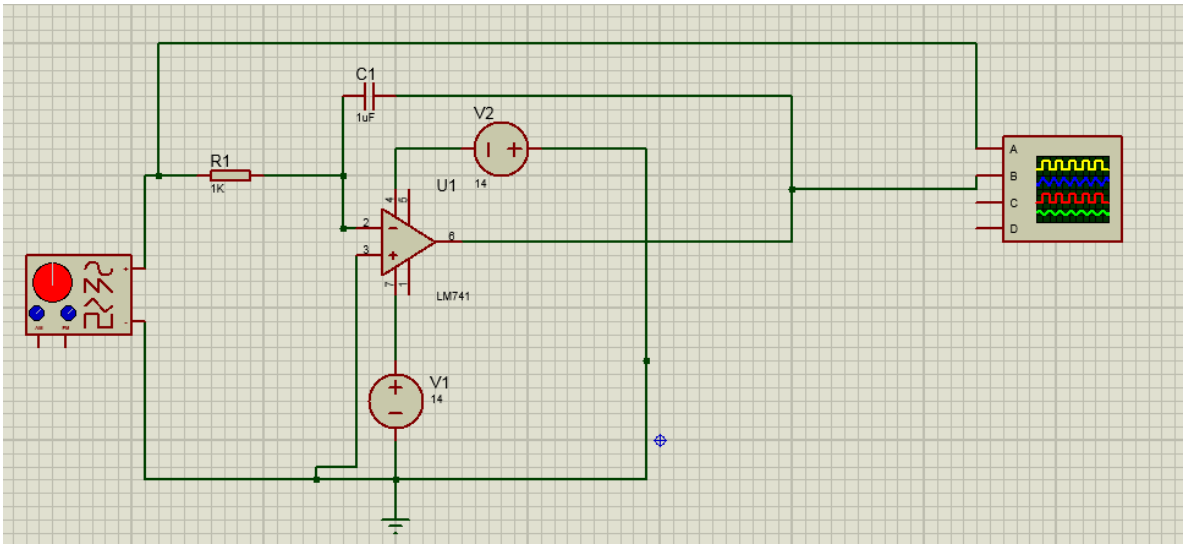
Se obtiene el valor de la inductacia del capacitor

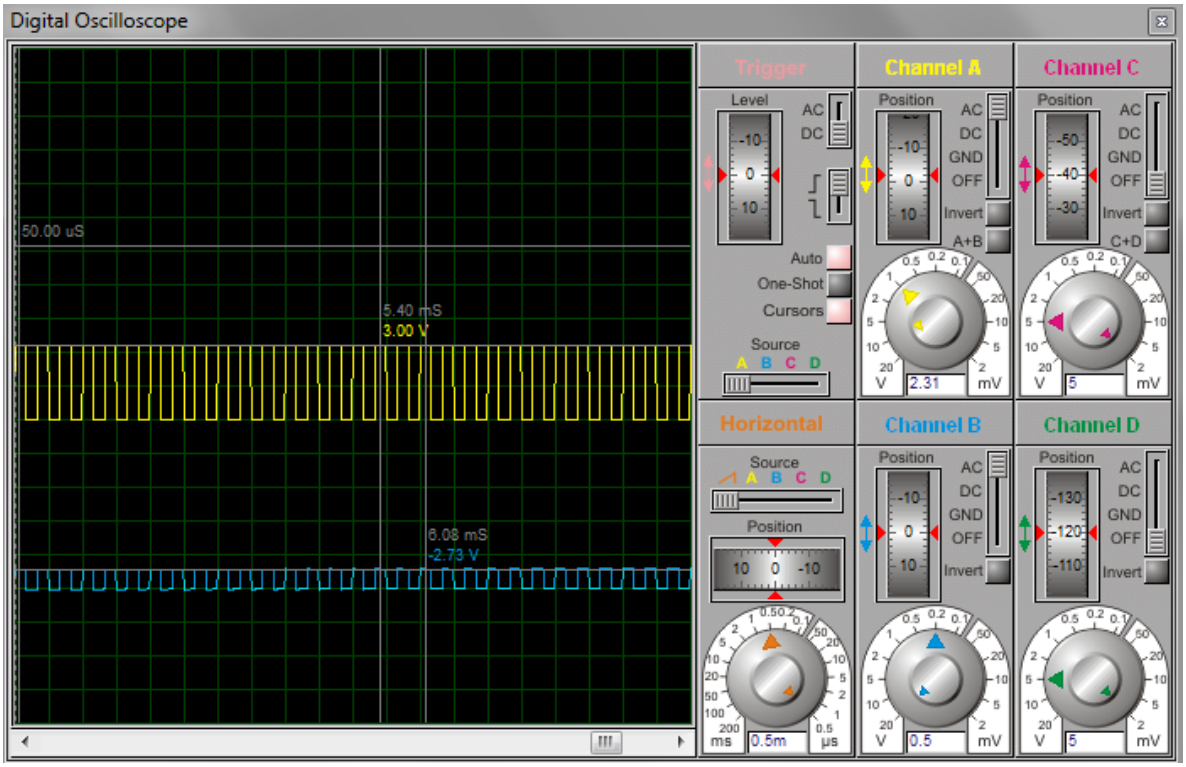
$$X_c = \frac{1}{2\pi f C} = \frac{1}{2\pi(3kHz)(1\mu F)} = 53.05k\Omega$$

Aplicación de formula de un amplificador inversor

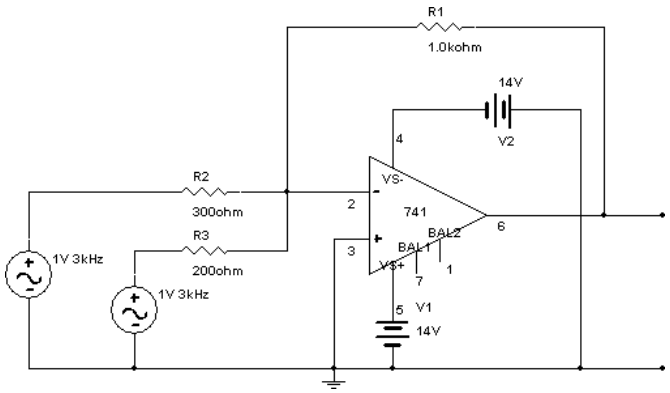
$$V_{out} = -V_{in}\left(\frac{R_2}{R_1}\right)$$

$$V_{out} = -5\left(\frac{53.05}{1000}\right) = -0.26\angle 90°V$$





Tercer análisis

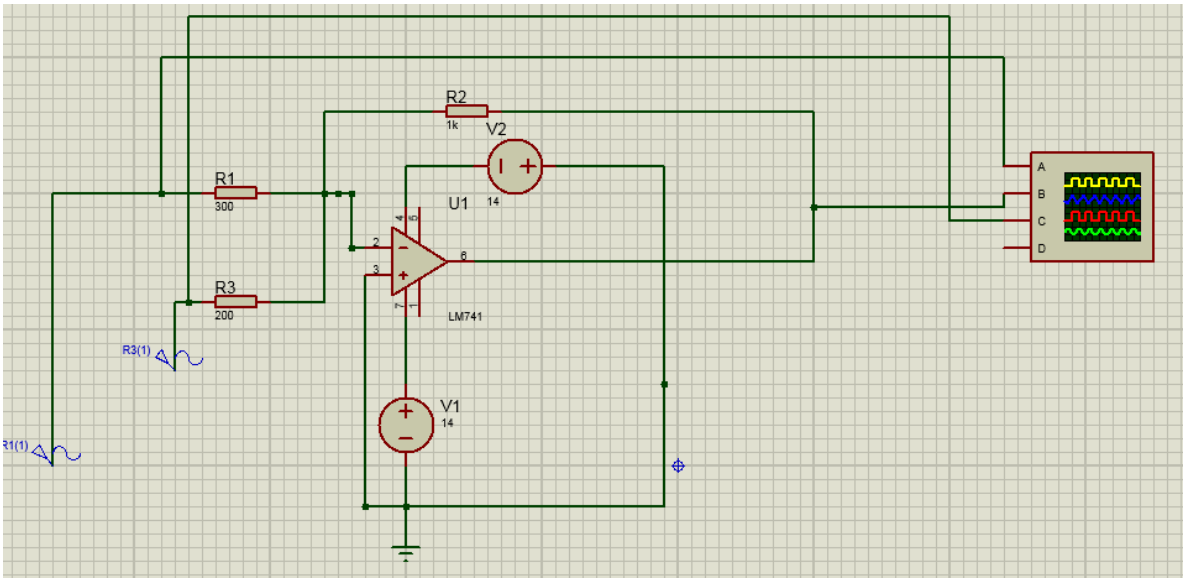


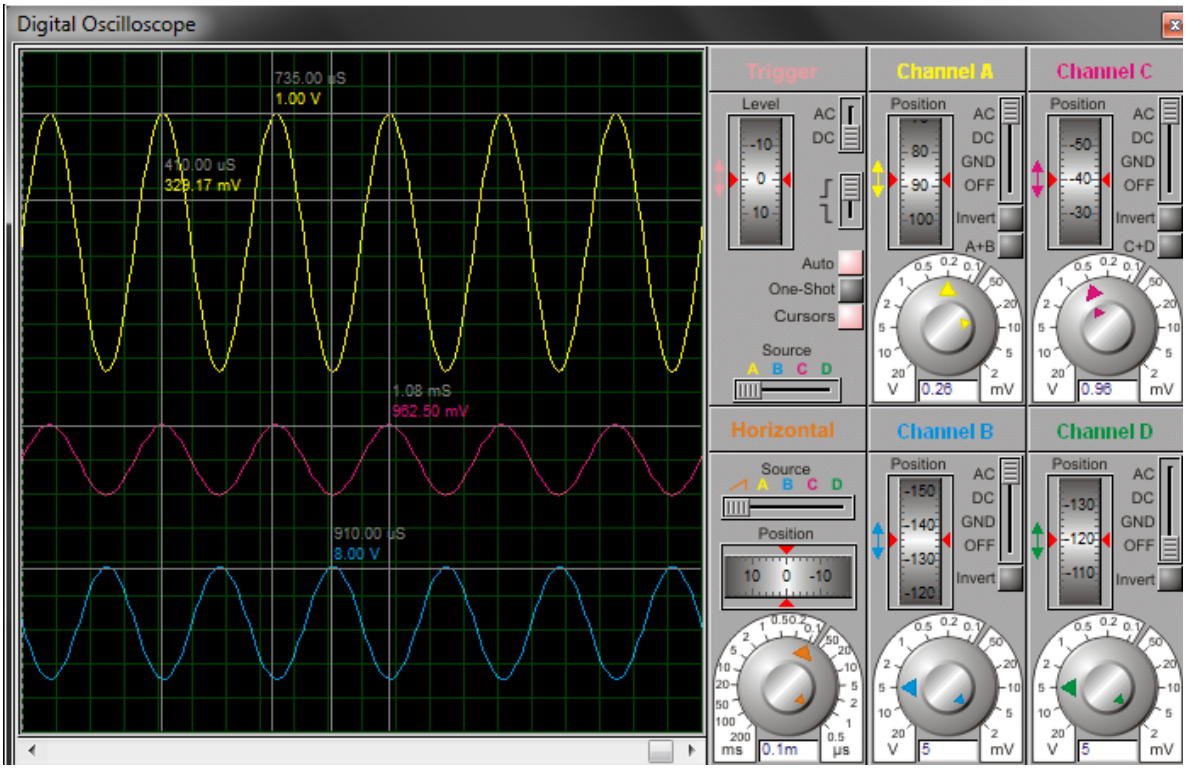
Este es un tipo de sumador de amplificador

Para lo cual aplicamos lo siguiente

$$V_{out} = -R_f\left(\frac{V_1}{R_1} + \cdots + \frac{V_n}{R_n}\right)$$

$$V_{out} = -100\left(\frac{1}{300} + \frac{1}{200}\right) = -8.33V$$




Digital Oscilloscope
735.00 uS
1.00 V
410.00 uS
329.17 mV
1.08 mS
962.50 mV
910.00 uS
8.00 V
Trigger
Level
AC
DC
Auto
One-Shot
Cursors
Source
A B C D
Channel A
Position
AC
DC
GND
OFF
Invert
A+B
0.26
mV
Channel C
Position
C+D
0.96
Horizontal
Position
0.1m
ms
µs
Channel B
5
Channel D