Envelope :
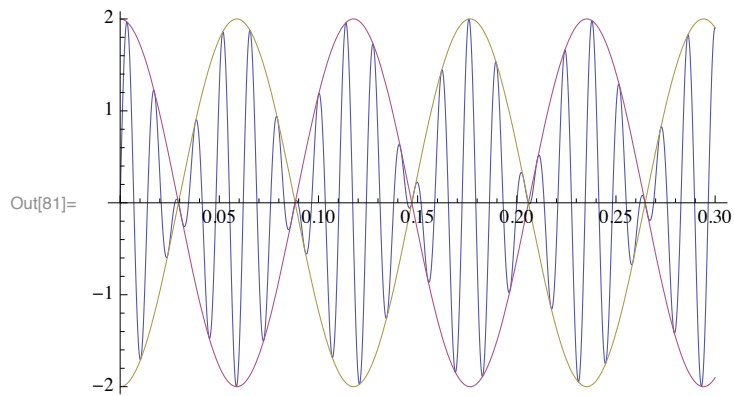
$$f(t) = \pm 2 \cos\left[2\pi \frac{(aq - pb)}{(p + q)} t \pm \pi \frac{(p - q)(2k + 1)}{2(p + q)}\right], \quad k = 0, 1, 2, 3, \ldots$$

Convergents[81 / 64]

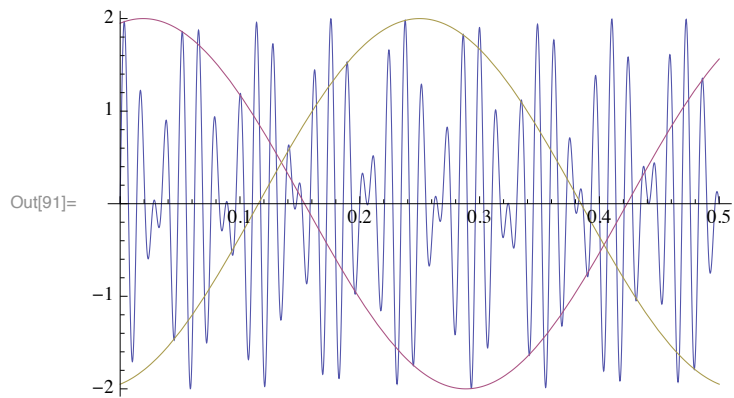Out[100]= $\left\{1, \dfrac{4}{3}, \dfrac{5}{4}, \dfrac{19}{15}, \dfrac{81}{64}\right\}$

$\dfrac{a}{b} = \dfrac{81}{64}, \quad \dfrac{p}{q} = \dfrac{1}{1}$

Plot[{Sin[2 π 64 t] + Sin[2 π 81 t], 2 Cos[2 π (17 / 2) t], -2 Cos[2 π (17 / 2) t]}, {t, 0, 0.3}]
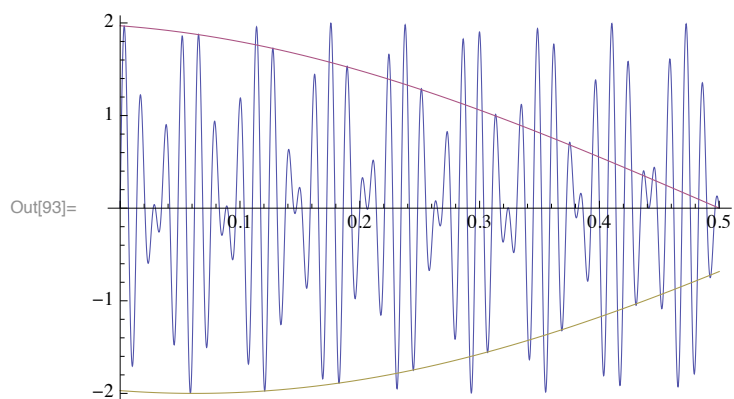
Out[81]=

$\dfrac{p}{q} = \dfrac{4}{3}$

In[91]:= **Plot[{Sin[2 π 64 t] + Sin[2 π 81 t],**
2 Cos[2 π (-13 / 7) t + π (1 / 14)], -2 Cos[2 π (-13 / 7) t - π (1 / 14)]}, {t, 0, 0.5}]
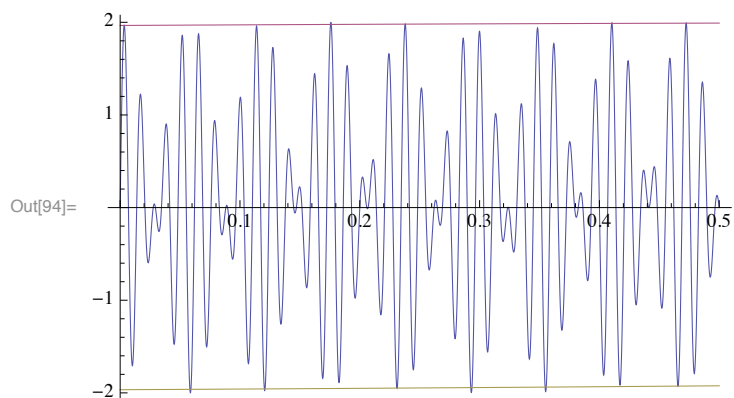
Out[91]=

$\dfrac{p}{q} = \dfrac{5}{4}$

In[93]:= `Plot[{Sin[2 π 64 t] + Sin[2 π 81 t],`
`2 Cos[π (8 / 9) t + π / 18], -2 Cos[π (8 / 9) t - π / 18]}, {t, 0, 0.5}]`

Out[93]=

$$\frac{p}{q} = \frac{19}{15}$$

In[94]:= `Plot[{Sin[2 π 64 t] + Sin[2 π 81 t],`
`2 Cos[2 π (-1 / 34) t + π (1 / 17)], -2 Cos[2 π (-1 / 34) t - π (1 / 17)]}, {t, 0, 0.5}]`

Out[94]=

$$\frac{p}{q} = \frac{81}{64}$$

In[102]:= `Plot[{Sin[2 π 64 t] + Sin[2 π 81 t], 2 Cos[π (17 / 290)], -2 Cos[-π (17 / 290)]}, {t, 0, 0.5}]`

Out[102]=