

You probably made a mistake with the calculation of the period.

The amplitude of this graph and  $y = \frac{3}{2}\cos 4x$  is  $\frac{3}{2}$ .

However, this graph has 4 cycles in the interval  $[0, \pi]$ , so a period of  $\frac{\pi}{4}$ . But  $y = \frac{3}{2}\cos 4x$  has a period of  $\frac{2\pi}{4} = \frac{\pi}{2}$ .