

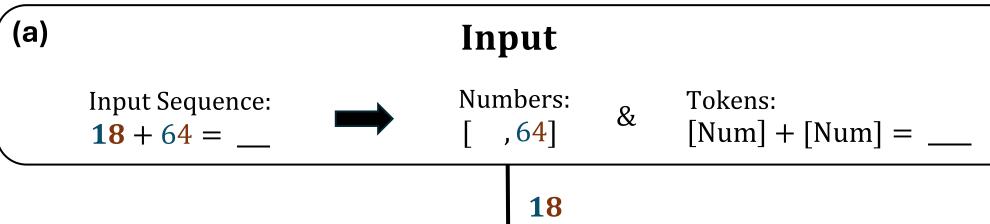
(a) Input

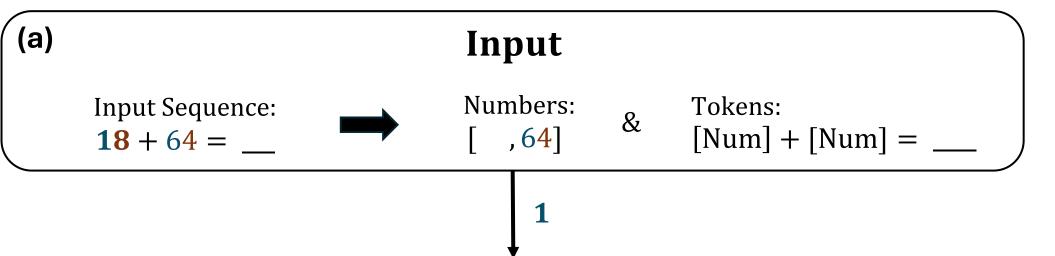
Input Sequence: **18** + 64 = \_\_\_

Numbers: [**18**, 64]

R Tokens:

$$[Num] + [Num] = \underline{\hspace{1cm}}$$

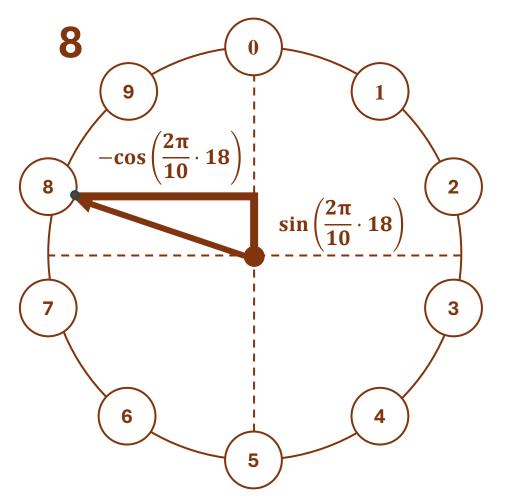




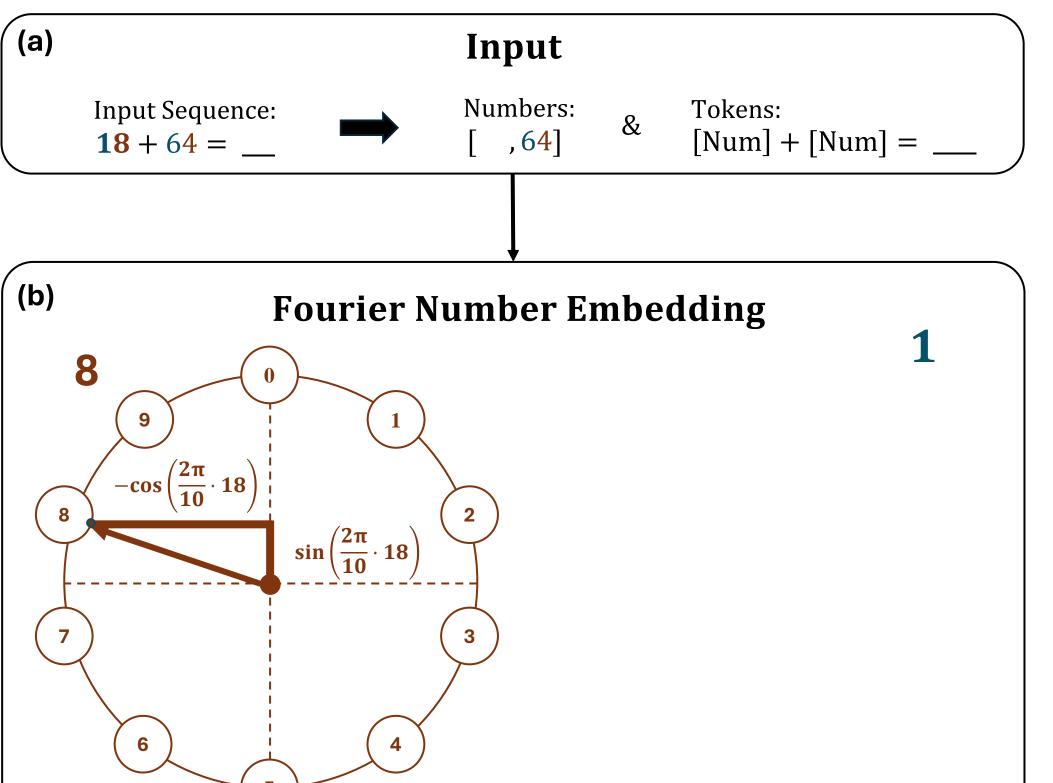


1

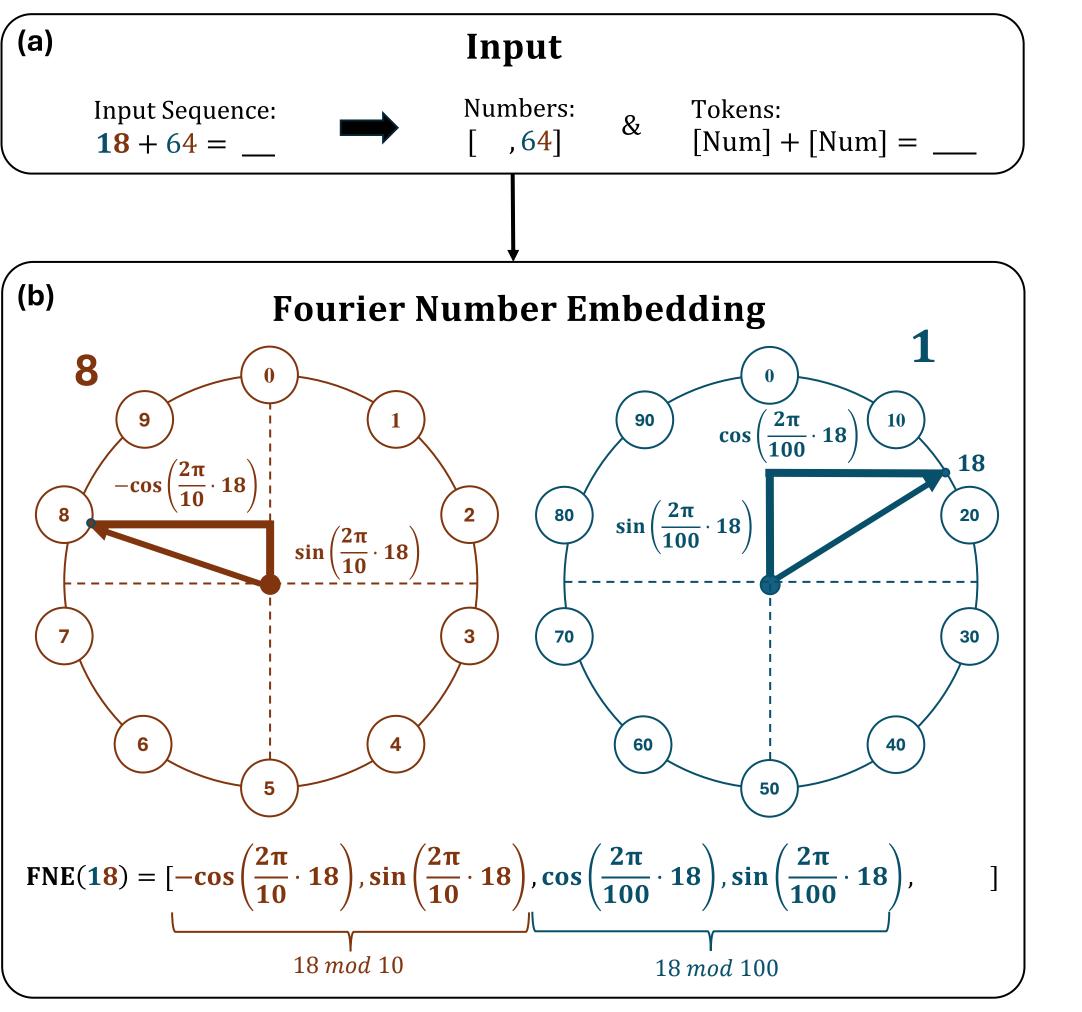
## (b) Fourier Number Embedding

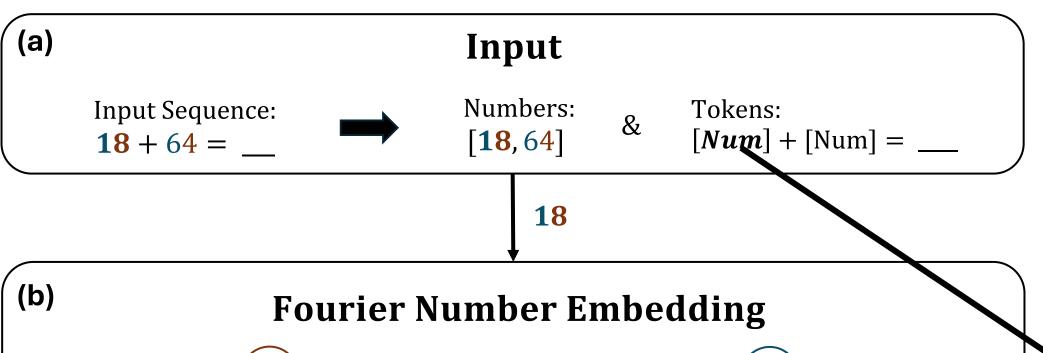


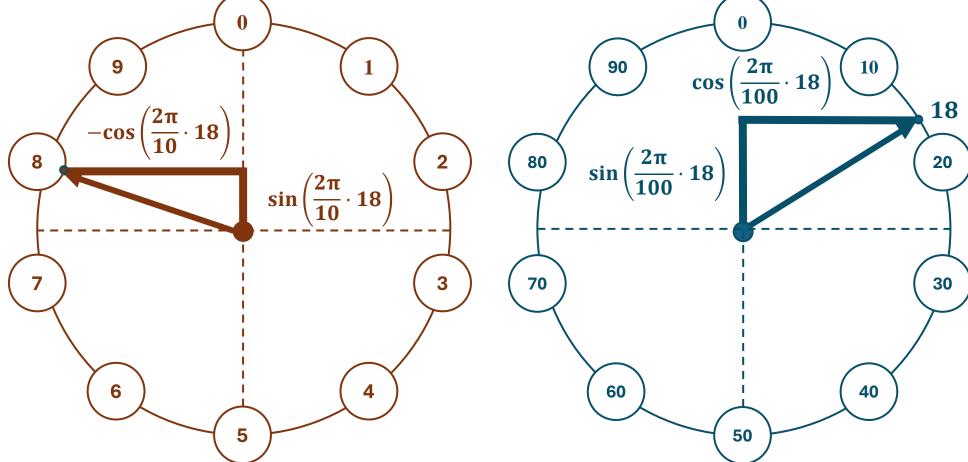
$$FNE(18) = \left[-\cos\left(\frac{2\pi}{10} \cdot 18\right), \sin\left(\frac{2\pi}{10} \cdot 18\right), \\ 18 \bmod 10$$



$$FNE(18) = \left[-\cos\left(\frac{2\pi}{10} \cdot 18\right), \sin\left(\frac{2\pi}{10} \cdot 18\right), \\ 18 \mod 10\right]$$







$$FNE(18) = \left[-\cos\left(\frac{2\pi}{10} \cdot 18\right), \sin\left(\frac{2\pi}{10} \cdot 18\right), \cos\left(\frac{2\pi}{100} \cdot 18\right), \sin\left(\frac{2\pi}{100} \cdot 18\right), 0, 0 \cdots\right]$$

$$18 \ mod \ 10$$

$$18 \ mod \ 100$$

Fourier Number Embedding Embedding([Num])

