Quiz: Cosines with Common Periods

Quiz: Which collection of cosine functions all have period $2\pi$?

Choices:

a) $\cos(t), \cos(t/2), \cos(t/3), \ldots$

b) $\cos(\pi t), \cos(2\pi t), \ldots$

c) $\cos(t), \cos(2t), \cos(3t), \ldots$

Answer: (c).

For $n = 1, 2, 3, \ldots$, $\cos(nt)$ has period $2\pi$ (and base period $2\pi/n$).