Quiz: Cosines with Common Periods

Quiz: Which collection of cosine functions all have period 2π ?

Choices:

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

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

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

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

MIT OpenCourseWare
http://ocw.mit.edu

18.03SC Differential Equations
Fall 2011