Shortcut to the period of an LC oscillator

We assume that the period T depends upon L and C but not upon the mass of the capacitor, the composition of the wire in the inductor (copper or aluminum?), the elevation of the circuit, or the phase of the moon:

$$T = f(L, C).$$

quantity	dimensions
T	sec
C	$\text{farad} = \dfrac{\text{coulomb}}{\text{volt}} = \dfrac{(\text{coulomb})^2(\text{sec})^2}{\text{kg m}^2}$
L	$\text{henry} = \dfrac{\text{tesla m}^2}{\text{amp}} = \dfrac{\text{newton}}{\text{coulomb (m/sec)}} \dfrac{\text{m}^2}{\text{amp}} = \dfrac{\text{kg m}^2}{(\text{coulomb})^2}$

The only way to combine farads and henrys to give seconds is as $\sqrt{LC}$. Any other combination leaves some coulombs (as well as some kilograms and some meters) in the result. Thus

$$T = [\text{dimensionless constant}]\sqrt{LC}.$$

The "dimensionless constant" would be something like 7 or $1/\pi$ or even 678.273, but *not* something like $g = 9.8\ \text{m/s}^2$.