$$
\begin{aligned}
y(t) &= A\cos(\omega t + \phi) \\
v(t) &= \frac{dy}{dt} \\
&= -\omega A \sin(\omega t + \phi) \\
a(t) &= \frac{dv}{dt} \\
&= -\omega^2 A \cos(\omega t + \phi) \\
\text{KE} &= \frac{1}{2}mv^2 \\
\text{KE} &= \frac{1}{2}m\omega^2 A^2 \sin^2(\omega t + \phi) \\
\text{PE} &= \frac{1}{2}k(y - y_{eq})^2 \\
&= \frac{1}{2}ky^2 \qquad , \text{ if we choose } y_{eq} = 0 \\
\text{PE} &= \frac{1}{2}kA^2 \cos^2(\omega t + \phi)
\end{aligned}
$$