This equation is of the form
\[ \ddot{\theta} + \lambda^2 \dot{\theta} = 0 \]
with

\[ -\lambda^2 = \frac{1}{ma^2} \left[ mg - ma^2 \omega^2 \right] = \gamma \]

\[ -\lambda^2 = \left[ \frac{g}{a} - \omega^2 \right] = \gamma \]

\[ \lambda = \left[ \frac{g}{a} - \omega^2 \right]^{1/2} \]

As Figure 9.10 shows, \( \theta = 0 \) is no longer a minimum for \( V(\theta) \) if \( \omega^2 > \frac{g}{a} \). Then \( V(\theta) \) has the shape \( \checkmark \) unstable equilibria

\[ -\pi \]
\[ \theta \]
\[ \pi \]

Two stable equilibria.