16.6 Derrick's theorem.
The energy functional is

$$E[\phi] = T[\phi] + V[\phi] = \int \mathrm{d}^n x \, \frac{1}{2}(\partial_i \phi)^2 + \int \mathrm{d}^n x \, V(\phi)\,. \tag{271}$$

Under a rescaling $x \to \tilde{x} = x/\lambda$, the kinetic energy changes with

$$\frac{\partial}{\partial x}\,\phi(\tilde{x}) = \frac{\partial}{\partial \tilde{x}}\,\frac{\partial \tilde{x}}{\partial x}\,\phi(\tilde{x}) = \frac{1}{\lambda}\,\frac{\partial \phi(\tilde{x})}{\partial \tilde{x}} \tag{272}$$

as

$$T_\lambda[\phi] = \frac{1}{2}\int \mathrm{d}^n x \left(\frac{\partial}{\partial x_i}\,\phi(\tilde{x})\right)^2 = \frac{\lambda^{n-2}}{2}\int \mathrm{d}^n \tilde{x} \left(\frac{\partial}{\partial \tilde{x}_i}\,\phi(\tilde{x})\right)^2 = \lambda^{n-2}T[\phi]. \tag{273}$$

while the potential energy scales as

$$V_\lambda[\phi] = \int \mathrm{d}^n x \, V(\phi(x/\lambda)) = \lambda^n \int \mathrm{d}^n \tilde{x} \, V(\phi(\tilde{x})) = \lambda^n V[\phi]\,. \tag{274}$$

Thus

$$E(\lambda) = \lambda^{n-2}T[\phi] + \lambda^n V[\phi] \tag{275}$$

If the initial solution for $\lambda = 1$ is stable, then we should have $E'(1) = 0$ and $E''(1) < 0$. But

$$E'(\lambda) = (n-2)\lambda^{n-3}T + n\lambda^{n-1}V \tag{276}$$
$$E'(1) = (n-2)T + nV\,. \tag{277}$$

Since both T and V are positive definite, stable solutions are only possible for $n = 1$.