In[1]:=
```
ClearAll["Global`*"]
```

$$V = -\frac{1}{2}\mu^2\left(\pi^2 + (v+\sigma)^2\right) + \frac{\lambda}{4}\left(\pi^2 + (v+\sigma)^2\right)^2;$$

$$V /. \left\{v \to \frac{\mu}{\sqrt{\lambda}}\right\} // \text{FullSimplify} // \text{Expand}$$

Out[3]=
$$\frac{\pi^4\lambda}{4} - \frac{\mu^4}{4\lambda} + \pi^2\sqrt{\lambda}\,\mu\,\sigma + \frac{1}{2}\pi^2\lambda\sigma^2 + \mu^2\sigma^2 + \sqrt{\lambda}\,\mu\,\sigma^3 + \frac{\lambda\sigma^4}{4}$$