

$$V_{L3} = -\frac{A}{r^6} + \frac{B}{r^{12}}$$

$$= -Ar^{-6} + Br^{-12}.$$

$$\frac{dV_{L3}}{dr} = 6Ar^{-7} - 12Br^{-13}.$$

$$\frac{dV_{L3}}{dr} = 0 \text{ when } r = r_{eq}$$

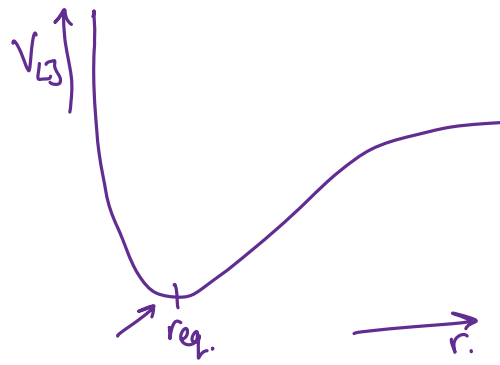
$$0 = 6Ar_{eq}^{-7} - 12Br_{eq}^{-13}.$$

$$\frac{12B}{r_{eq}^{13}} = \frac{6A}{r_{eq}^7}$$

$$\frac{12B}{r_{eq}^6} = 6A$$

$$r_{eq}^6 = \frac{12B}{6A} = \frac{2B}{A}$$

$$r_{eq} = \left(\frac{2B}{A}\right)^{\frac{1}{6}} = \sqrt[6]{\frac{2B}{A}}$$



$$\frac{dV_{L3}}{dr} = 0 \text{ at turning point.}$$