

## 10.10 - kinetická energie rovná klidové

$$v = ?$$

$$E = m \cdot c^2$$

$$E_{\text{kin}} = E_0$$

$$m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$E_{\text{kin}} = E - E_0$$

$$E = \frac{m \cdot c^2}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$E - E_0 = E_0$$

$$\frac{m c^2}{\sqrt{1 - \frac{v^2}{c^2}}} - m c^2 = m c^2$$

$$m c^2 \left( \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}} - 1 \right) = m c^2$$

$$\frac{1}{\sqrt{1 - \frac{v^2}{c^2}}} = 2$$

$$\sqrt{1 - \frac{v^2}{c^2}} = \frac{1}{2}$$

$$1 - \frac{v^2}{c^2} = \frac{1}{4}$$

$$\frac{v^2}{c^2} = \frac{3}{4}$$

$$v^2 = \frac{3}{4} c^2$$

$$v = \frac{\sqrt{3}}{2} c$$

