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$$m = 2 \cdot m_0$$

$$\frac{m_0}{\sqrt{1-\left(\frac{v}{c}\right)^2}} = 2 \cdot m_0 \quad \rightarrow \quad \sqrt{1-\left(\frac{v}{c}\right)^2} = \frac{1}{2} \quad \rightarrow \quad 1-\left(\frac{v}{c}\right)^2 = \frac{1}{4}$$

$$\rightarrow \quad 1-\frac{1}{4} = \left(\frac{v}{c}\right)^2 \quad \rightarrow \quad \frac{v}{c} = \sqrt{1-\frac{1}{4}} \quad \rightarrow \quad v = 0{,}87\,c$$

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$$m = \frac{m_0}{\sqrt{1-\left(\frac{v}{c}\right)^2}} = \frac{9{,}1 \cdot 10^{-31}\,kg}{\sqrt{1-0{,}8^2}} = \frac{9{,}1 \cdot 10^{-31}\,kg}{0{,}6} = 1{,}52 \cdot 10^{-30}\,kg$$