Ralph (45 kg) is standing on a merry-go-round as it spins. He experiences an acceleration of $4.2 \, \text{m/s}^2$. Milhouse (35 kg) stands on the same merry-go-round, what centripetal force does he experience?
Note: \( v_{\text{Ralph}} \neq v_{\text{Milhouse}} \) because \( r_{\text{Ralph}} \neq r_{\text{Milhouse}} \).

However, \( T_{\text{Ralph}} = T_{\text{Milhouse}} \).

\[
a_i = \frac{4\pi^2 r}{T_i^2}
\]

\[
T_i = \sqrt{\frac{4\pi^2 r}{a_i}} = 4.11 \text{s}
\]

\[
F_2 = m \cdot \frac{4\pi^2 r}{T^2} = 98 \text{ N}
\]