

# The Lorentz transformations

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## Introduction

Even before Einstein developed the special theory of relativity, Hendrick Lorentz had come up with a set of equations that would replace the familiar Galilean transformations:

$$\begin{aligned}x' &= \gamma(x - vt) \\y' &= y \\z' &= z \\t' &= \gamma\left(t - \frac{xv}{c^2}\right)\end{aligned}$$