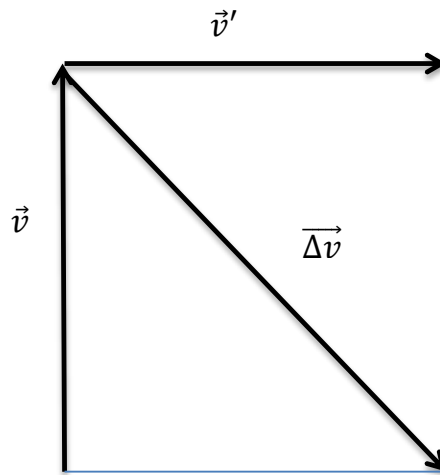


Answer on Question#38821, Physics, Mechanics

Question:

A truck travelling due to north at 20m/s turns East and travels at the same speed. Find the change in its velocity

Answer:



where \vec{v} is velocity directed to north, \vec{v}' is velocity directed to East, $\vec{\Delta v}$ is change in velocity.

Pythagorean theorem:

$$\Delta v = \sqrt{|\vec{v}|^2 + |\vec{v}'|^2} = 20\sqrt{2} \frac{m}{s} \cong 28 \frac{m}{s}$$

Answer: $28 \frac{m}{s}$