Answer on Question #73446-Physics-Classical Mechanics

A vaulter is trying to reach a velocity of 7 m/s at the end of a 14-m runway. How quickly must he accelerate?

Solution

We use equation

$$v^2 - v_i^2 = 2as$$

$$v_i = 0\frac{m}{s}$$

$$a = \frac{v^2}{2s} = \frac{(7)^2}{2(14)} = 1.75\frac{m}{s^2}.$$

Answer: $\mathbf{1.75}\frac{\boldsymbol{m}}{\boldsymbol{s^2}}$.