Answer on the question #47539, Physics, Mechanics | Kinematics | Dynamics

Question

With an average acceleration of −1.0 m/s2,
how long will it take a cyclist to bring a bicycle with an initial speed of 14.6 m/s to a complete stop? Answer in units of s

Solution

According to the acceleration definition:

$$a = \frac{v_2 - v_1}{t} \Rightarrow t = \frac{v_2 - v_1}{a}$$

$$t = \frac{0 - 14.6}{-1.0} = 14.6\ s$$

Answer: 14.6 s