1. A skier starts from rest down a slope 500.0 m long. The skier accelerates at a constant rate of 2.00 m/s2. What would the velocity of the skier at the bottom of the slope be.

$l = 500\,m$ $a = 2\dfrac{m}{s^2}$ $v - ?$	*Solution.* The path of a body during a uniform accelerated motion (with a constant acceleration a) can be expressed by the initial and final velocities: $l = \dfrac{v_{1x}^{\ 2} - v_{0x}^{\ 2}}{2a_x}$, $l = \dfrac{v^2 - 0^2}{2a}$. The velocity of the skier at the bottom of the slope will be $\boxed{v = \sqrt{2la}}$.

Let check the dimension: $[v] = \sqrt{m \cdot \dfrac{m}{s^2}} = \dfrac{m}{s}$.

Let evaluate the quantity: $v = \sqrt{2 \cdot 500 \cdot 2} = 44.7\left(\dfrac{m}{s}\right)$.

Answer: $44.7\dfrac{m}{s}$.