

6. $s = 3000\text{m}$
 $v_k = 340\text{m/s}$
 $t = \frac{3000\text{m}}{340\text{m/s}} \approx 8,8\text{s}$

8. $s = 16\text{km}$
 $t = 40\text{min} = \frac{2}{3}\text{h}$
 $v = \frac{16\text{km}}{\frac{2}{3}\text{h}} = 24\frac{\text{km}}{\text{h}} = \underline{\underline{6,7\frac{\text{m}}{\text{s}}}}$

7. $t = 1,4\text{s}$
 $v_k = 340\text{m/s}$
 $s = v_k \cdot t = 1,4\text{s} \cdot 340\text{m/s} = 476\text{m}$
 ääni menee edestakaisin $\frac{476\text{m}}{2} = \underline{\underline{238\text{m}}}$

9. K $s = 440\text{m}$ $t = 30\text{s}$ S $s = 24000\text{m}$ $t = 1800\text{s}$
 $v_k = \frac{440\text{m}}{30\text{s}} = 14,7\text{m/s}$ $v_k = \frac{24000\text{m}}{1800\text{s}} \approx 13,3\text{m/s}$

Kiitäjällä suurempi keskinopeus

10. $s = 15\text{m}$
 $t = 0,9\text{s}$
 $v_k = \frac{s}{t} = \frac{15\text{m}}{0,9\text{s}} = 16,7\text{m/s} = \underline{\underline{60\text{km/h}}}$

11. $\Delta t = 3\text{s}$
 $a = 6,3\text{m/s}^2$
 $\Delta v = a \cdot \Delta t = 6,3\text{m/s}^2 \cdot 3\text{s} = \underline{\underline{18,9\text{m/s}}}$

12. a) $\Delta v = 160\text{km/h} = 44,4\text{m/s}$
 $t = 7\text{s}$
 $a = \frac{\Delta v}{t} = \frac{44,4\text{m/s}}{7\text{s}} \approx \underline{\underline{6,3\text{m/s}^2}}$

b) $\Delta v = -270\text{km/h} = -75\text{m/s}$
 $t = 3\text{s}$
 $a = \frac{-75\text{m/s}}{3\text{s}} = \underline{\underline{-25\text{m/s}^2}}$