[mex137] Acceleration from clocking consecutive space intervals

A body moving in a straight line with constant acceleration passes two consecutive equal spaces, each of length d, in times $\Delta t_1, \Delta t_2$. The body is already moving when it enters the first space. Show that the acceleration is

$$a = \frac{2d(\Delta t_1 - \Delta t_2)}{\Delta t_1 \Delta t_2 (\Delta t_1 + \Delta t_2)}.$$

Solution: