A track meet is held on the planet Sar in a distant solar system. In kroll-put, Twen (an alien athlete) must throw a "kroll" (an abducted physics teacher from the planet Earth) using its prehensile ears. The following stroboscopic picture displays the location of the kroll every cen (a cen is a unit of time used only on Sar). Note that the distance units on the picture are in tf, which is also an obscure unit used on Sar. Please find the initial velocity of the kroll in units of tf/cen, and the free-fall acceleration in units of tf/cen<sup>2</sup>. (Note that both are vectors.)

