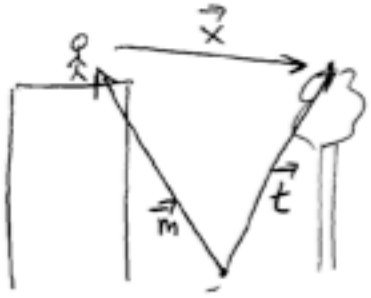
Assignment #2 Ch 1: 75, 80, 83

(75) (a) $\vec{a} = \langle 5, 3, 0 \rangle$ m $\quad \vec{c} = \langle 6, -9, 0 \rangle$ m $\quad \vec{g} = \langle -10, 3, 0 \rangle$ m

(b) $|\vec{a}| = \sqrt{5^2 + 3^2} = 5.8$ m $\quad |\vec{c}| = \sqrt{6^2 + 9^2} = 10.8$ m $\quad |\vec{g}| = \sqrt{10^2 + 3^2} = 10.4$ m

(80)



(a) $\vec{m} = \langle 12, 30, 13 \rangle$ m

$\vec{t} = \langle -25, 55, 43 \rangle$ m

$\vec{m} + \vec{x} = \vec{t}$

$\vec{x} = \vec{t} - \vec{m} = \langle -37, 5, 30 \rangle$ m

(b) $|\vec{x}| = \sqrt{37^2 + 5^2 + 30^2} = 47.9$ m

(83) (a) $\vec{r} = \langle 3 \times 10^{-10}, -3 \times 10^{-10}, 8 \times 10^{-10} \rangle$ m

(b) $|\vec{r}| = \sqrt{(3 \times 10^{-10})^2 + (-3 \times 10^{-10})^2 + (8 \times 10^{-10})^2}$ m

$= 9.1 \times 10^{-10}$ m

(c) $\hat{r} = \dfrac{\vec{r}}{|\vec{r}|} = \left\langle \dfrac{3 \times 10^{-10}}{9.1 \times 10^{-10}}, \dfrac{-3 \times 10^{-10}}{9.1 \times 10^{-10}}, \dfrac{8 \times 10^{-10}}{9.1 \times 10^{-10}} \right\rangle$

$= \langle 0.33, -0.33, 0.88 \rangle$