

0.1 Homework 01 - Forces + Newton's Laws

9.

$$\begin{aligned}a_x(0.7) &= \frac{d}{dx}v_x(0.7) = \frac{d}{dx}(-15 + 2t - 4t^3)\bigg|_{t=0.7} \\&= -3.88m/s^2\end{aligned}$$

$$\begin{aligned}a_y(0.7) &= \frac{d}{dy}v_y(0.7) = \frac{d}{dy}(25t + 7t - 9t^2)\bigg|_{t=0.7} \\&= 19.4m/s^2\end{aligned}$$

a) $0.340 \cdot \sqrt{3.88^2 + 19.4^2} = 6.73N$

13.

17.

26.

27.

41.

44.

54.