0.1 Homework 01 - Forces + Newton's Laws

9.

a)

$$a_x(0.7) = \frac{d}{dx}v_x(0.7) = \frac{d}{dx} - 15 + 2t - 4t^3\Big|_{t=0.7}$$
$$= -3.88m/s^2$$
$$a_y(0.7) = \frac{d}{dy}v_y(0.7) = \frac{d}{dy}25t + 7t - 9t^2\Big|_{t=0.7}$$
$$= 19.4m/s^2$$

$$\boxed{0.340 \cdot \sqrt{3.88^2 + 19.4^2} = 19.7842}$$

13.

17.

26.

27.

41.

44.

54.