d) If $\vec{a}$ is maintained, where is fish at t=25s, and in what direction is $\vec{v}$?

$$\vec{r}(t=25) = \vec{r}_i + \vec{v}_i t + \tfrac{1}{2}\vec{a}t^2 \qquad \text{(new 2.10)}$$

$$= (10\hat{\imath} - 4\hat{\jmath}) + (4\hat{\imath} + 1\hat{\jmath})t + \tfrac{1}{2}(0.8\hat{\imath} - 0.3\hat{\jmath})t^2$$

$$= [10 + 4(25) + 0.4(25)^2]\hat{\imath} + [-4 + 1(25s) - \tfrac{0.3}{2}(25)^2]\hat{\jmath}$$

$$\boxed{\vec{r}(t=25) = \qquad 360\hat{\imath} \qquad\qquad -72.75\,\hat{\jmath} \quad m}$$

And $\quad \vec{v}(t=25) = \vec{v}_i + \vec{a}t \qquad\qquad \text{(new 2.13)}$

$$= (4\hat{\imath} + \hat{\jmath}) + (0.8\hat{\imath} - 0.3\hat{\jmath})(25)$$

$$= [4 + 0.8(25)]\hat{\imath} + [1 - 0.3(25)]\hat{\jmath}$$

$$\vec{v}_f = 24\hat{\imath} \quad - 6.5\,\hat{\jmath} \qquad \text{so } \theta_v = \tan^{-1}\left(\tfrac{-6.5}{24}\right) = \boxed{-15.15°}$$