Assume the position

Hobbes is chasing Calvin. Their paths are defined by the following vectors in unit vector form.

$$\vec{r}_{calvin} = (t-1)\hat{i} + (11-t^2)\hat{j}$$

$$\vec{r}_{hobbes} = (5-5t)\hat{i} + (5+5t)\hat{j}$$

1. Will Hobbes catch Calvin? If so, when and where?

2. Assuming Hobbes does catch Calvin*, what will be the angle between their two velocities at the time of impact?

   ** Did this give away the answer to question 1?*