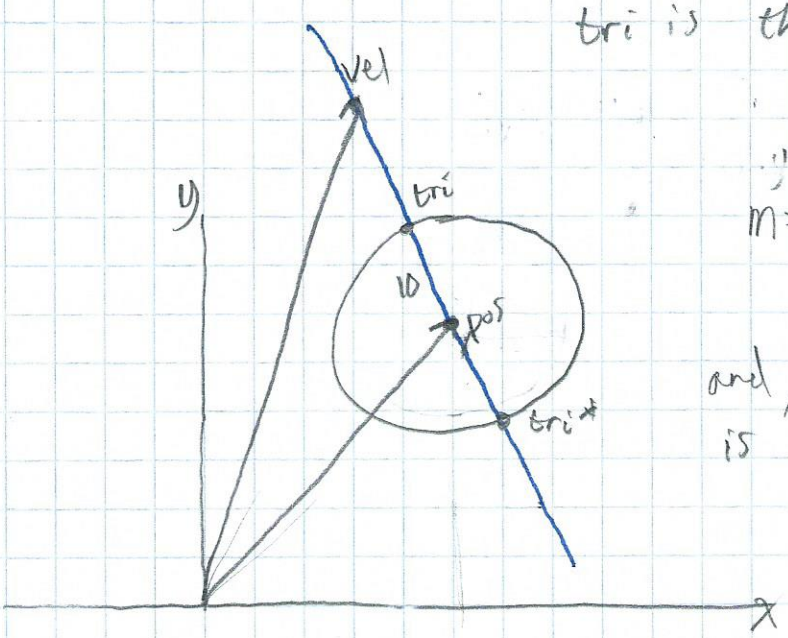
tri is the "head" of the triangle



$$m = \frac{vel.y - pos.y}{vel.x - pos.x}$$

and, $(y - pos.y) = m(x - pos.x)$ is the equation of the blue line.

We want $tri = (tri.x, tri.y)$ to be a point on the line a distance of 10 away from "pos."

$$tri.y - pos.y = m\,tri.x - m\,pos.x$$
$$\Rightarrow tri.y = m\,tri.x - m\,pos.x + pos.y$$

and $d(pos, tri) = 10 = \sqrt{(tri.x - pos.x)^2 + (tri.y - pos.y)^2}$

so, $100 = tri.x^2 - 2tri.x\,pos.x + pos.x^2 + tri.y^2 - 2tri.y\,pos.y + pos.y^2$

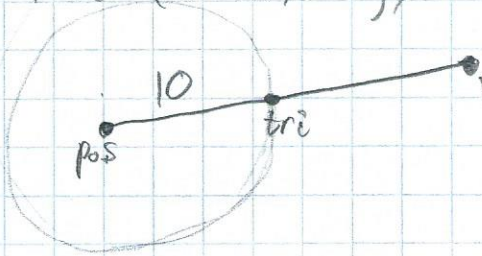
Plug in $tri.y$: $100 = tri.x^2 - 2tri.x\,pos.x + pos.x^2 + [m\,tri.x - m\,pos.x + pos.y]^2$
$- 2pos.y\,m\,tri.x + 2m\,pos.x\,pos.y - 2pos.y^2 + pos.y^2$

$100 = tri.x^2 - 2tri.x\,pos.x + pos.x^2 + pos.x^2 m^2 - 2pos.x\,pos.y\,m - 2pos.x\,m^2\,tri.x + pos.y^2$
$+ 2pos.y\,m\,tri.x + m^2\,tri.x^2 - 2pos.y\,m\,tri.x + 2m\,pos.x\,pos.y - 2pos.y^2 + pos.y^2$

$0 = (1+m^2)\,tri.x^2 + (-2pos.x - 2pos.x\,m^2 + 2pos.y\,m - 2pos.y\,m)\,tri.x$
$+ (pos.x^2 + pos.x^2 m^2 - 2pos.x\,pos.y\,m + pos.y^2 + 2m\,pos.x\,pos.y - pos.y^2 - 100)$

$0 = (1+m^2)\,tri.x^2 + (-2pos.x^2 - 2pos.x\,m^2)\,tri.x + [pos.x^2(1+m^2) - 100]$

Then $(tri.x, tri.y)$ should be a point on the line:



a distance of 10 away from the center of the circle.