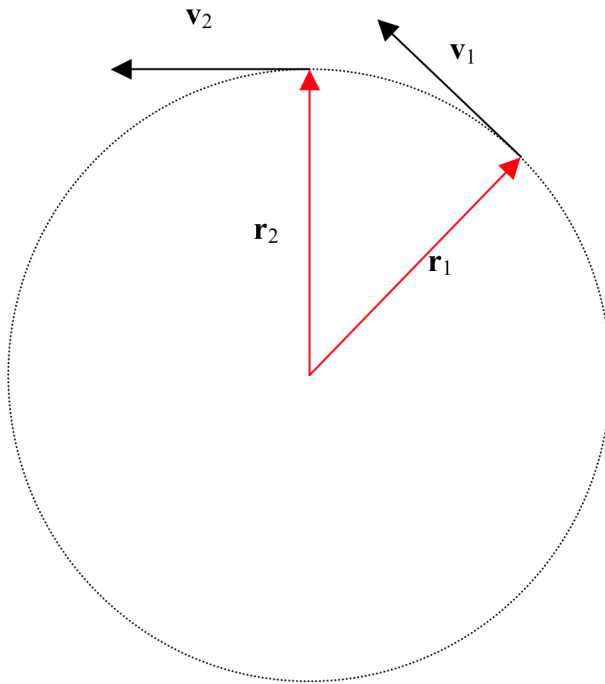
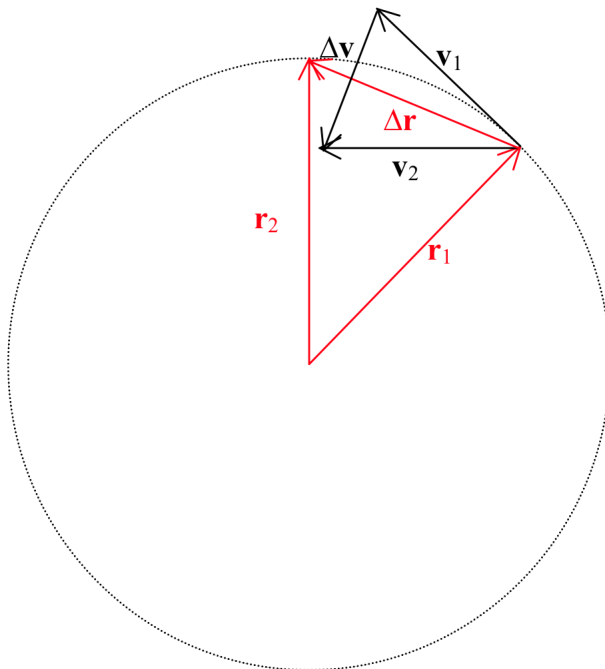


In the diagram shown below, there is an object moving with constant speed in a circle. So $|v_1| = |v_2|$ and $|r_1| = |r_2|$.



$\Delta v = v_2 - v_1$, so subtracting vectors, as we see on the diagram shown below, the triangle with the Δv is a similar triangle with the triangle with the two radii and the Δr .



1. The length of the path from t_1 to t_2 can be written as $v\Delta t$. Since these are similar triangles, you can say, $\Delta v/\Delta r = v/r = \Delta v/v\Delta t$.
2. Then by algebra, $\Delta v/\Delta t = (v/r)*v$.
3. We are left with $|a| = v^2/r$.