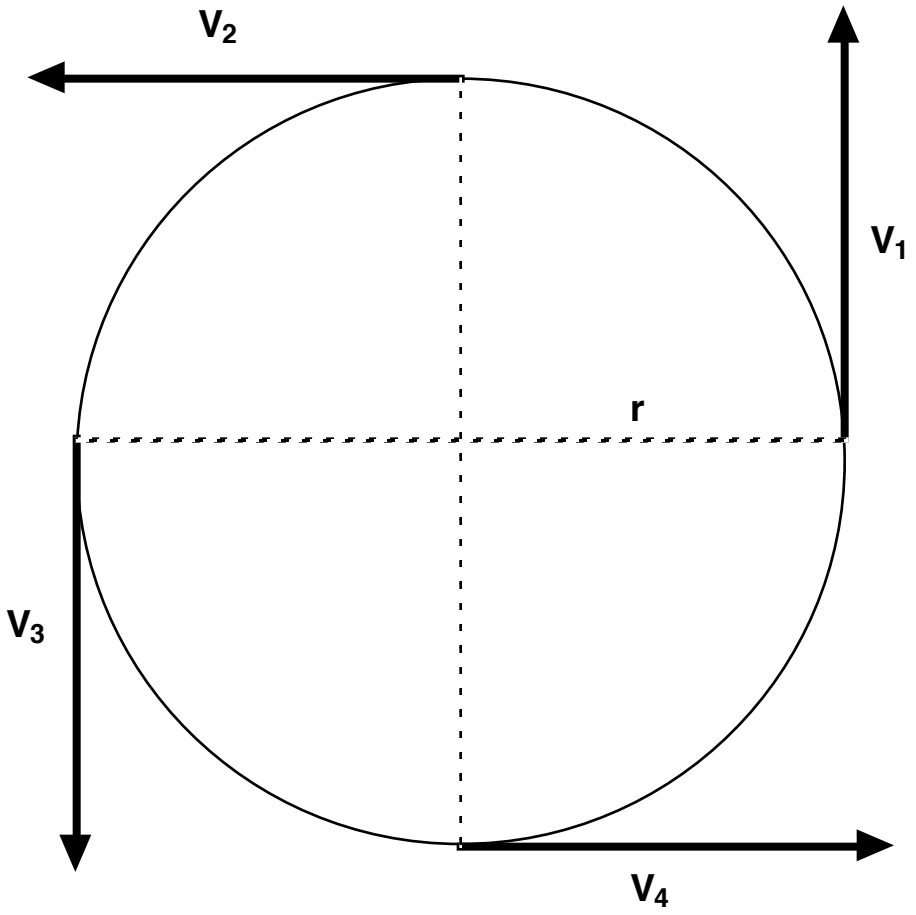
Velocity Vectors and Centripetal Acceleration

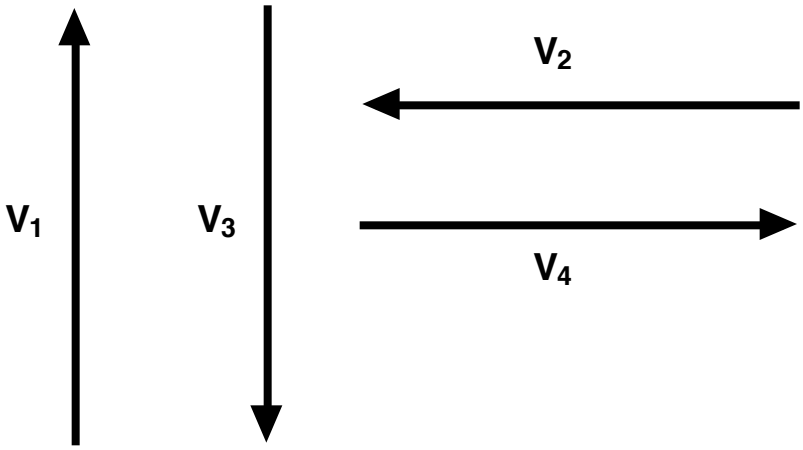


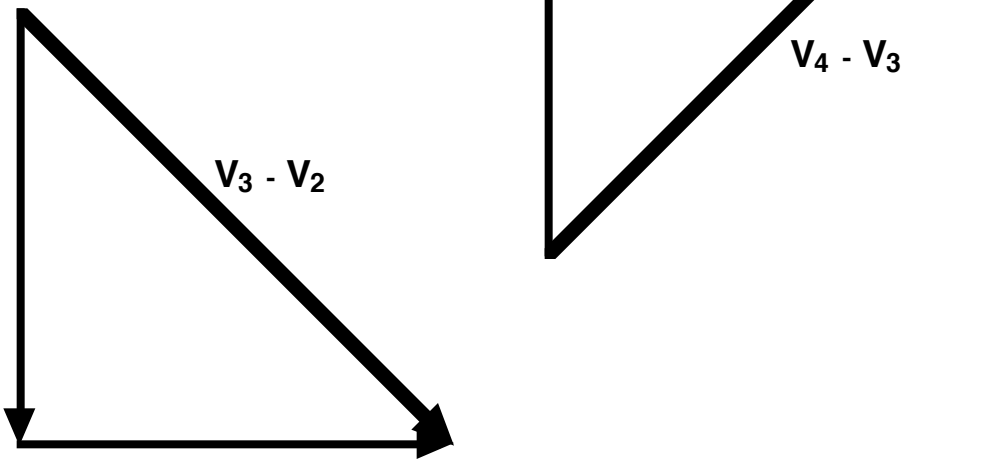
A car is traveling at a constant 88 ft/sec around a circular racetrack. Its velocity at t_1 (time 1) is $\mathbf{v_1}$. A short time later (at time 2) it is $\mathbf{v_2}$; at time 3, it is $\mathbf{v_3}$, and at time 4, it is $\mathbf{v_4}$.

1. Is this car accelerating? Why? _____

2. On separate graph paper, copy vectors $\mathbf{v_1}$ and $\mathbf{v_2}$, then graphically determine $\mathbf{v_2 - v_1}$.

This vector would therefore represent the car's change in velocity (Δv).


V_1
V_3
V_2
V_4


$V_3 - V_2$
$V_4 - V_3$