

Speed v : distance/time

Angular speed ω : angle/time

If a body moves along a circle circumference,
then 360 degrees of motion (2π [rads]) are equivalent to
 2π radiuses of distance, which helps us say: $v = \omega r$

Angular velocity: x rads/s == x radiuses in one second

Angular acceleration: $(x \text{ rad/s})/s$ == x (1rad/s) speeds in one sec.

The **tangential acceleration** is the acceleration that shows how much the measure of speed(==velocity) gets different along the path of motion [\gg equivalent of angular acceleration in terms of distance], while the centripetal acceleration shows how much the direction of speed (==velocity) changes.

Similarly, then,

tangential acc. = angular acc. \times radius, while

centripetal force: $|F| = m|a| = m\omega^2 r$.