	classmate	
6	Date	9

All the same and the party beautiful to the last time of the party of		The second secon		
-		the same report to the same of		TATION
A 1 D A			- 0 4 1/1	TAILUIS
	AD M	TIANIC	CKAVI	A Chamman - Annual Control
		JIION W	and the second	man of contrast of
or continued and an arrange of the continued of the conti			and desired	

## CIRCULAR MOTION 4 ANGULAR SPEED

Horning almay				
wall officer	1/11/17	100	21101	a pribary
-	_			
	<u> </u>			1
		. 1	Y	1 1 30/4
11			-	

Total distance = 211r

Period = T.
: Linual speed:

Angular speed (w) = angle swept = <u>AO</u>

$$\omega = 2\pi = 2\pi \int_{0}^{\pi} dt$$

The velocity vector is at tangent to the circle. In a short time St, the body travels a

distance VAt.

The distance travelled is an arc of the circle which is equal to 100

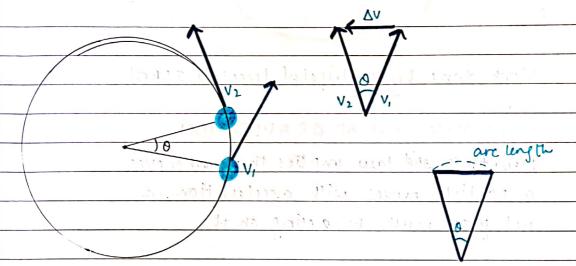


Therefore, Vot = no

V=Irw

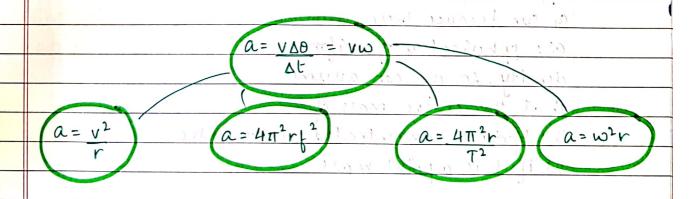
## CENTRIPETAL ACCELERATION

In circular motion, even though the linear speed is constant, the velocity is not. Thus, there is acceleration.



If DO is very small, then the distance
AV is approximately an arc of a circle of radius v.
Cy subtending an or angle so

DV = VD



✓ Just Ask

	Clas	
	Date	MAte
R	Page	

The centripetal acceleration is directed towards the centre.

There is no such force as centrifugal force A body in circular motion cannot be in equilibrium a so no force putting away from the centre is required.

## CENTRIPETAL FORCES

 $F = mv^2 = mw^2r$ 

Work done by centripetal forces is 2 ERO!

## NEWTON'S LAW OF GRAVITATION

New ton's and law implies that whenever a particle moves with acceleration, a net force must be acting on it.

Force of gravitation between two points of masses is:

F= GM, M2 r2... are very small compared to their seperation.

Applies to planets

cy sun because they

are spherical cy of uniform

density, so one can assume

that the entire mass of

the body is concentrated at its centre-

as if it is a point mass.

✓ Just Ask

	A mass M is said to create gravitational field in the
	space around II. Another man placed at some print
	near M'feels' the gravitational field in the form of
	a gravitational force.
	Gravitational feild strengthight a certain point is
	the seavitational force per unit mass experienced by a
	small point mass 'm' at that point.
	The way point.
	(a. E
	g = F
	accueration
	of free fall.
	The same of the sa
	The force experienced by a small point mass in placed
	at a distance from mass Mis.
	$\left(\begin{array}{c} F = Mm \cdot q \\ r^2 \end{array}\right)$
, , , , , , , , , , , , , , , , , , ,	and wrong it and rate burners value wrong to boing!
	in the 212 house to the artiff ending
	$\left(g = \frac{M}{r^2}\right)$
	Gravitational feild strength is a vector quantity.
	Around a single point or spherical man, it is radial
	The feild is not uniform - the feild lines get farther
	apart with increasing distance from the mass

	ORBITAL MOTION
156	The force of savitation provides a centripetal
	force on the particle.
	Louis tourist of the
	$mv^2 = gMm$
	$\frac{mv^2 = qMm}{r}$
	because of the property of the property of
	V= GM+ Land Lains Lains Il and
	r
	V= 2Πr
	T
	$V^2 = \frac{4\pi^2 r^2}{T^2} = \frac{GM}{r}$
	72 r
511	to make the comment of the make make of
	$T^2 = 4\pi^2 r^3 M  was a matrix a day$
	GM
	And the second s
	Period of planets going around the sun is proportional
	to the 3/2 power of the orbit radius.
1	Charle with the state of the st
	the state that he man a bridge of the state
	The second of th
	and the standing spirature from the standard
$-\parallel$	✓ Just Ask
- 11	- 5056751