

g's on An Egg

Names _____



Volunteers 1. _____
2. _____
3. _____
4. _____

Period _____

video _____

Data Table (5pts)

recorded values		Trial	calculated values				
rev	t	r	T*	v*	v ² *	a*	g's*
Revolutions	seconds	radius	Period	velocity	velocity ²	acceleration	
counted	stopwatch	meters	sec/rev	m/s	m ² /s ²	m/s ²	dimensionless
10	8.65	1/2	.865				
		2					
		3					
		4					

Calculations (5pts) (show units!)

$$*1) T = \frac{\text{Seconds}}{\text{revolution}} = \frac{8.65}{10 \text{ rev}} = .865$$

$$*2) V = \frac{d}{t} = \frac{2\pi r}{T} = \frac{2\pi "r"}{T} = \frac{2\pi (1/2)}{.865} = 3.65 \frac{m}{s}$$

$$*3) V^2 = V \cdot V = 13.32 \frac{m^2}{s^2}$$

$$*4) a = \frac{V^2}{r} = \frac{13.32 \frac{m^2}{s^2}}{\frac{1}{2} m} = 26.64 \frac{m}{s^2}$$

$$*5) g's = \frac{a}{9.8 \frac{m}{s^2}} = \frac{26.64 \frac{m}{s^2}}{9.8 \frac{m}{s^2}} = 2.72$$