

Data Table:

trial #	mass of stopper, m	centripetal force, F_c	circle radius, r	total dist $d=20(2\pi r)$ (m)	time, t (s)	velocity $v=d/t$ (m/s)	v^2
1	0.016 kg	1.0 N	0.50 m				
2	(same as trial #1)	(same as trial #1)	1.0 m				
3	(same as trial #1)	2.0 N	(same as trial #1)				
4	0.036 kg	(same as trial #1)	(same as trial #1)				

Lab Conclusions (All conclusions are within bounds of experimental error.)

- In trials 1 and _____, radius doubled, while mass and centripetal force remained constant. When the radius doubled, the velocity (increased, decreased), but did not double. However, v^2 _____.
Conclusion: Radius is _____ proportional to (v, v^2).
- In trials 1 and _____, centripetal force doubled, while mass and radius remained constant. When the centripetal force doubled, the velocity (increased, decreased), but did not double. **Conclusion: Centripetal force is _____ proportional to (v, v^2).**
- In trials 1 and _____, mass doubled, while radius and centripetal force remained constant. When the mass doubled, the velocity (increased, decreased), but was not cut in half. **Conclusion: Mass is _____ proportional to (v, v^2).**
- Centripetal forces are always directed toward the (*center, outside*) of a circle.
- What furnishes the centripetal force needed to make your car turn in a curved path? _____
 What happens to centripetal force on a wet or icy street? _____
 To keep the car on its circular path, you should _____.