

Wk 23 Circular Motion

name: _____

4 Centripetal Force - What Force Does the Job?

Friction	Tension	Drag	Weight	Normal
from surfaces	from ropes or cables	from air or other fluids	from gravity	from surfaces

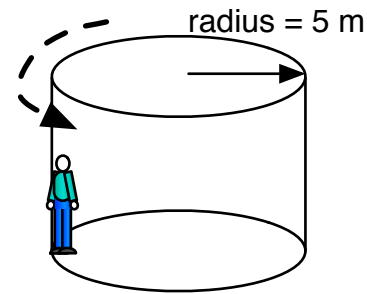
Determine what force plays the role of the centripetal force in each situation.

1. A person walks around a corner.	
2. A person swings their keys on a lanyard around in a circle.	
3. A bird circles high up in the air.	
4. A person sits in a car that makes a sudden turn. The person slides along the seat and hits the door.	
5. A person rides the Gravitron	
6. The Moon orbits around the Earth.	
7. The Earth orbits around the Sun.	
8. A car rounds a turn.	
9. (make one up)	

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5 Spinny Ride Practice



$$accel_{CENTRIPETAL} = \frac{v^2}{r}$$

then divide by 10 to convert to g's

SHOW WORK!

1. The Gravitron ride takes 20 seconds to spin around 5 times.

a) Calculate the time it takes to spin around once.

b) Calculate the distance the person goes around each spin. (circumference!)

$$c = 2\pi r$$

c) Calculate the person's velocity. (velocity = distance / time)

d) Use the formula to calculate the centripetal acceleration of the person.

e) How many g's is that?