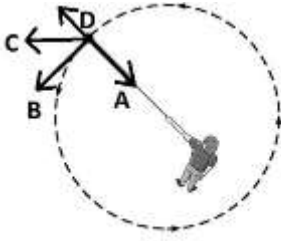


Centripetal Force Classwork 3

1.) What direction will the ball fly when let go at the position below?



- 2.) What is the centripetal acceleration of an object traveling at 30m/s in a circle with radius 20m?
- 3.) What is the centripetal acceleration of a 2000kg plane traveling in a circle with radius 100m at a speed of 100m/s?
- 4.) What is the centripetal force of the above plane?
- 5.) What is supplying the centripetal force for the below situations?
 - a. A rock twirled by a string.
 - b. A moon traveling around a planet.
 - c. A car turning a corner.
 - d. A kid on a spinning ride at a carnival.
- 6.) A 1200kg car is traveling around a turn at 12m/s and requires 1000N to keep it in its circular path. What is the radius of its path?
- 7.) For Valentine's Day a boy wants to calculate the attraction force between him and his girlfriend. When they are hugging, their center of gravities are about 0.25m apart. The boy has a mass of 75kg and the girl has a mass of 60kg. What is the force of attraction due to gravity between the two lovers? Is it a lot? Why?
- 8.) What is the unit for "G"?
- 9.) Give 3 ways you can "accelerate".
- 10.) A car is traveling at 30m/s and begins to accelerate at 2.0m/s^2 . If the car continues to accelerate for 10s.
 - a. What is the final speed of the car after 10s?
 - b. How far did the car travel during those 10s?
 - c. What is the average speed of the car during those 10 seconds? (hint: average velocity is how far did an object travel, divided by how long did it take to travel that distance)
- 11.) A kid drops his toy from the top of a 40m high building. How long will it take for the boy to see it break on the floor?
- 12.) A 30kg rocket needs to accelerate at 12m/s^2 . What force is required to make that happen?