

Review For Fall Final 1st Installment

1. An airplane travels 1200 km in 90 minutes. What is the average speed in m/s for this trip?
2. A gazelle moves 6 km to the east and then travels 8 km north. What is the displacement of the gazelle (include the angle)?
3. A car with a velocity of 25 m/s comes to rest in a distance of 115 m. What was the acceleration of the car?
4. A jet liner must reach a speed of 80 m/s from rest for takeoff. If the runway is 1300 meters long, what constant acceleration is needed?
5. A gazelle is launched with a velocity of 40 m/s at an angle of 37 degrees above horizontal. What are the horizontal and vertical components of the gazelle's velocity?
6. A stone is thrown straight upward and it rises to a height of 35 m. How long will it take for the ball to land? (Include up trip in answer.)

7. A rifle is aimed directly at the bull's eye of a target 75 meters away. If the bullet has a speed of 350 m/s, how far below the bull's eye will the bullet hit?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
8. An armadillo running at 20 m / s at the top of a 30 meter high cliff runs horizontally off of the cliff. How far from the base does it land?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
9. A gazelle travels 17 meters horizontally from the base of a 30 meter high cliff. How fast was the gazelle running when it ran off of the top of the cliff?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
10. A gazelle is fired at 300 m / s out of a cannon inclined at 25 degrees above horizontal. What is the total time that the gazelle spends in the air?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
11. A catapult can launch a projectile at 85 m / s at an angle of 62 degrees above horizontal. How far will the projectile travel?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
12. A gazelle is launched from a cannon 400.0 m/s at a 55 degree angle from a 35 meter high cliff. How far from the base of the cliff will the gazelle land?