Worksheet 3 – Projectile Motion

An Alaskan rescue plane drops a package of emergency supplies to a stranded party of explorers. The plane is traveling horizontally at 100.0 m/s at a height of 50.0m above the ground.

- What horizontal distance does the package travel before striking the ground?

- What is the velocity of the package just before it hits the ground (remember this is a vector so direction and magnitude is needed)?

A water particle in a stream of water in a fountain takes 0.35 s to travel from spout to receptacle when shot at an angle of 67° and an initial speed of 5.0 m/s.

- What is the vertical distance between the levels of the fountain?

A daredevil attempts to jump a canyon 50 m wide. To do so, she drives her car up a 15° incline. On the other side of the canyon, another 15° incline is built so the car can land properly.

- What minimum speed must she achieve to clear the canyon?

- How long will she be in the air?

A police officer is investigating an accident scene. The driver claims that they were traveling at the speed limit when they hit a patch of ice and flew off the road and landed the car 62 feet away from a 12-foot tall bridge. Does this scenario seem reasonable? The speed limit for the road way is 35 mph. Use 32.174 ft/s^2 for gravity.