Motion Design Problem

A ball is dropped from a bridge directly above a dot on the floor. At the same time, a constant velocity cart is released from its starting position with a path pointed at the same mark. The two objects make it to the dot at the exact same time.

* The ball accelerates due to gravity with negligible air resistance (assume free fall)
* A red car with a blue line and a black pole

  Description automatically generated with medium confidenceThe cart moves at a constant velocity in a straight line path from the moment it is released

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| **Property** | **Range to Choose From** | **Selected Value** |
| Height of the Ball | 2 m - 20 m |  |
| Cart Distance from Dot | 1 m - 15 m |  |
| Cart Velocity | 1.5 m/s - 5 m/s |  |

Determine a set of three variables within the provided range that satisfy this situation. Show all work below and write final variable values in the table above.