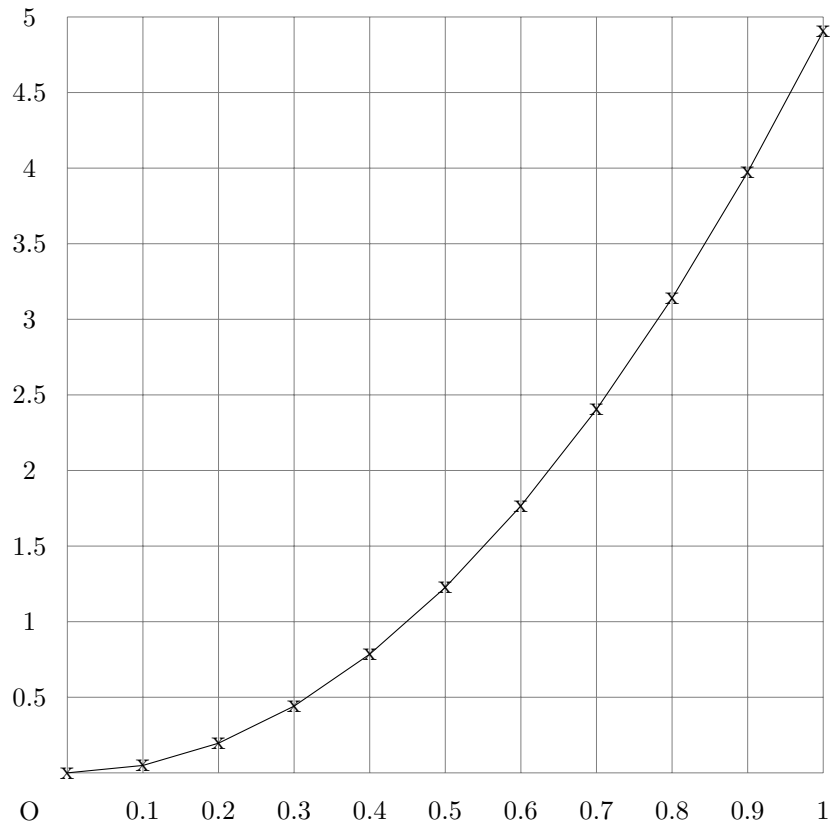


# Challenges in target archery Question 5 Attachment

Donald Leung

October 10, 2015

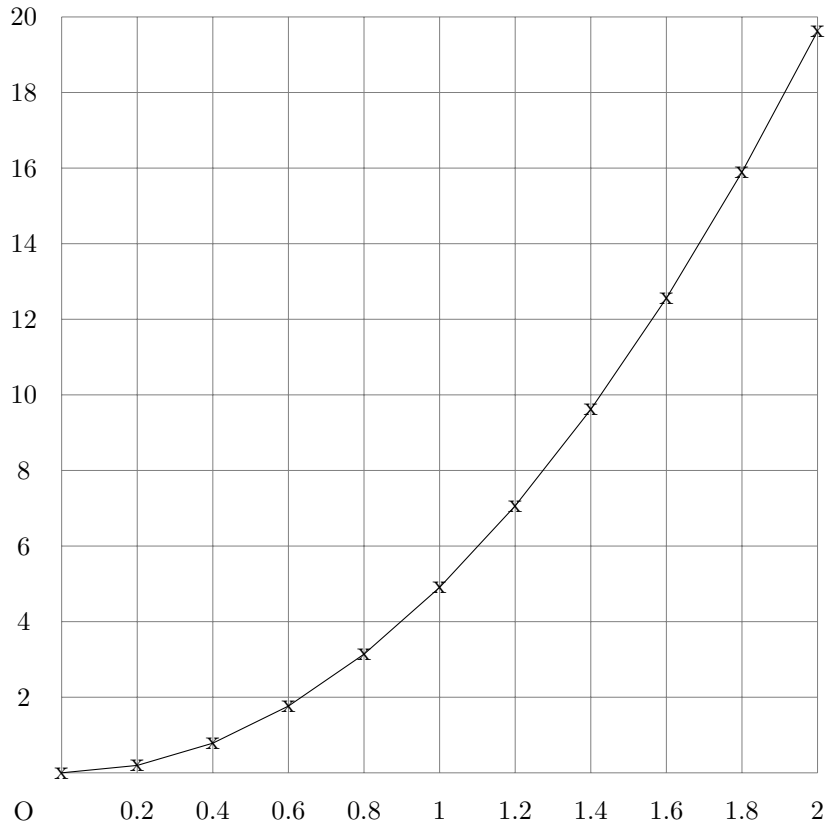
## 1 Modern Arrows



The graph above shows the vertical displacement changing with time for a range of 60 metres for an arrow at speed  $60\text{ms}^{-1}$  (modern arrows) that is shot *horizontally*. The downwards direction is considered positive displacement in this case. The vertical axis is vertical displacement in meters while the horizontal axis is time in seconds.

*Note: I used “connect the dots” approach in this software to draw the curve of best fit only because I don’t really know how to draw a quadratic in this software.*

## 2 Arrows from 5 Decades Ago



The graph above shows the vertical displacement changing with time for a range of 60 metres for an arrow at speed  $30\text{ms}^{-1}$  (arrows from five decades ago) that is shot *horizontally*. The downwards direction is considered positive displacement in this case. The vertical axis is vertical displacement in meters while the horizontal axis is time in seconds.

*Note: I used “connect the dots” approach in this software to draw the curve of best fit only because I don’t really know how to draw a quadratic in this software.*