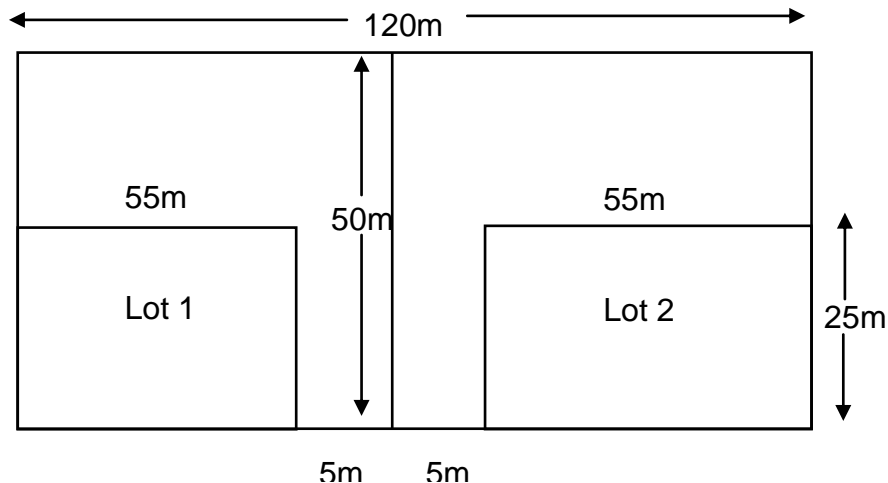


# MATHEMATICS

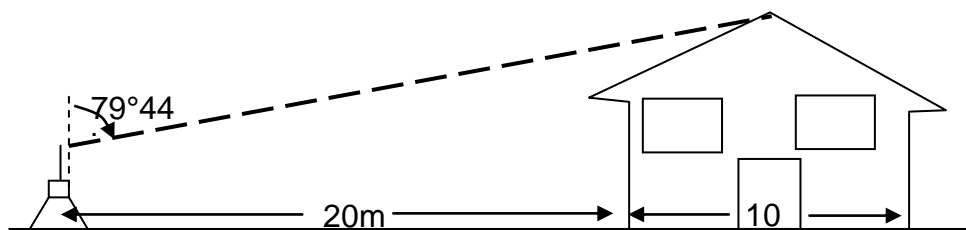
## Level One

### Subdividing Land

Setting: A property south of Auckland is to be subdivided into four smaller lots, with the purpose of creating two back lots.



- 1) Calculate the area of the individual lots and thus the total area of the property. (Note: Lots 1 and 2 are the same size, as are the two back lots).
- 2) The owners of lot 1 decide to add another storey to their home. Because of the clause in their property title, stating they cannot build over 6m in height (otherwise the back lot will lose too much sun during the day), they have to carefully construct the second storey. Once the second level is complete the neighbours don't believe that it is below the allowable 6m and employ a surveyor to determine the true height of the house. Assuming the house is 10m wide and the measurement is taken to exactly half way, the following diagram shows all values obtained from the survey



The height of the instrument is 1.55m; all measurements are taken from this height.

Is the house within the allowable height?