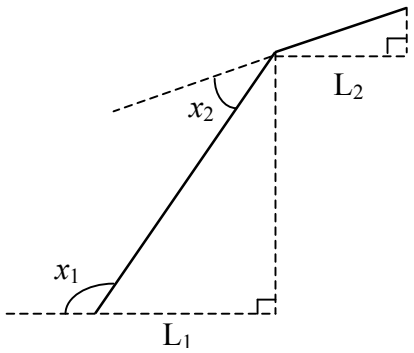
Tall Buildings
Worksheet 1

<u>Activity 1</u>

This is a simplified picture of the crane in the presentation. Two lengths and two angles are given.

1. Calculate the height that this crane can reach, and therefore the maximum height of the building.

   Take x_1 = 100°, x_2 = 30°, L_1 = 10 m, L_2 = 5 m



2. Now, let's see the effect that the angle of the crane positioning has on the maximum height of the building.
   a. Increase x_1 by 5° and calculate the maximum building height.
   Hint: You will not be able to use L_1 and L_2 anymore since they will be different. You will need the crane arm lengths which can be found from question 1.

   b. Now decrease x_1 by 5° and calculate the maximum height of the building.

   c. Do you think the dimensions and setup of the crane are important factors to consider during construction.