**Activity 2 Worksheet: Minimising heat loss using differential calculus**

# Practice question 1

A small rectangular warehouse has a length twice its width and is fully enclosed except for the floor. The roof loses twice as much heat per square metre as the walls. The warehouse has a volume of 2400 m3.

Find the dimensions of the warehouse that will minimise the total heat loss**.**

# Practice question 2

A rectangular storage unit has a length three times its width and is fully enclosed except for the floor. The roof loses 50% more heat per square metre than the walls, but no heat is lost through the floor. The total volume of the storage unit is 3600 cubic metres.

Find the dimensions of the unit that will minimise the total heat loss, using the heat loss equation and differentiation.