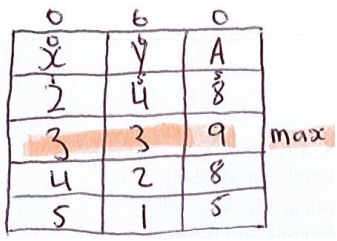
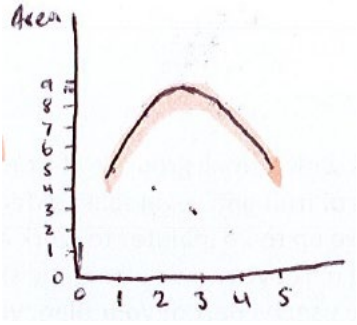
Merit

NZQA Intended for teacher use only



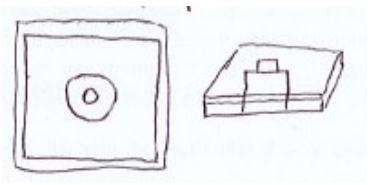


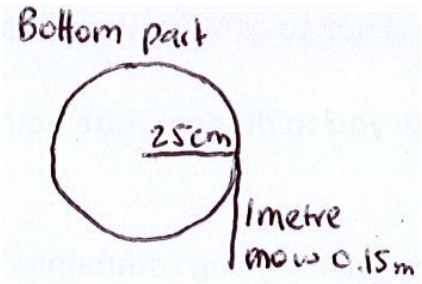
My table and graph has shown me that the maximum area would be 9 m^2 and that to achieve that maximum area, my length and width of my garden box would both have to be 3m long

Volume of inside

To measure the inside, I have to subtract the depth of the timber which will make the equation 2.9 (l) x 2.9(w) x 0.2(h).
But because the soi has to sit below, our new equation becomes 2.9 x 2.9 x (0.2-0.05) = 1.26m^3

Cylinder





Since the soil will only go up 0.15m then the only part of the cylinder water tank that will go in is:
π x 0.25^2 x 0.15 = 0.029m^3
The new volume of the inside will be
1.26 - 0.03 = 1.23m^3
To determine how much soil we will need, I will convert m^3 into litres.
1.23 x 1000 = 1.230 litres
Since the bags of soil come in 40 litres I will need 1230 ÷ 40 = 30.75 bags
Cost of Soil
31 bags of soil x $8.83 = $ 273.73 inc GST
Cost of timber
I will buy 6 200mm x 100mm by 2.1m which will cost me: 6 x 66.78 = $400.68 inc GST
Cost of timber and soil
400.68 + 273.73 = $674.41 inc GST
$573.25 exc GST
Though this might seem cheap, there are unforseen costs that go into this project such as the nails needed to connect the timber, the sharp equipment needed to cut the timber and also the water tank that sits in the middle of this garden.