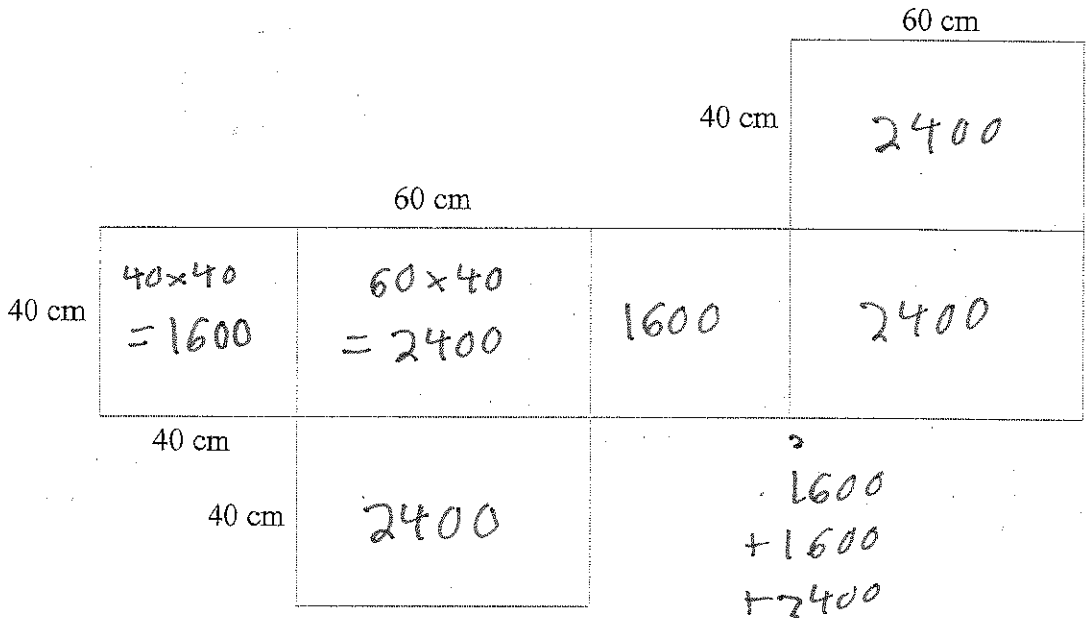
Name: Key

1. Explain in your own words what surface area is.

Surface area is how many squares of a certain size you could stick to the outside of a 3-D object.

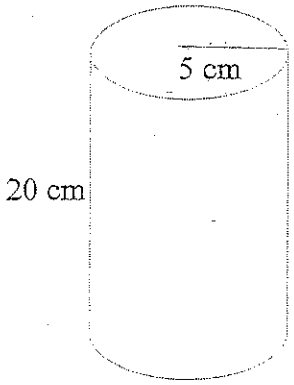
2. A cardboard box design is below, what will the surface area of the box be?



1600
+1600
+2400
+2400
+2400
+2400
12800 cm^2

3. Determine the surface area of the following shapes

a)

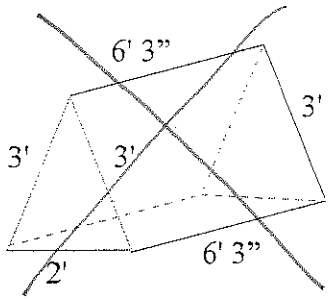


$SA = 2\pi r^2 + 2\pi rh$

$= 2\pi(5)^2 + 2\pi(5)(20)$

$= 785.40\text{ cm}$

b)



This question did not give enough info to solve, you needed height of the triangles.

4. A baseball league gives out silver coated baseballs as awards. The baseballs have a circumference of 23.6 cm, and a diameter of 7.5 cm. Getting 1mm think silver plating costs \$0.50 per cm^2, how much will each award cost?

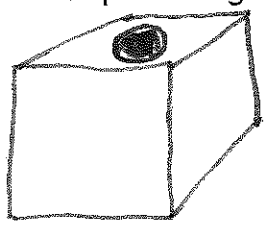
SA of baseball $= \pi d^2$

$= 176.71\text{ cm}^2$

1 cm^2 of plating costs \$0.50

$\frac{1\text{ cm}^2}{\$0.50} = \frac{176.71\text{ cm}^2}{x}$ (it costs \$88.36)

5. A 1 meter cube has a 10 centimeter diameter hole drilled through the centre of it. By what percentage does this increase the surface area?



SA of cube $= 6\text{ m}^2$

Drilling hole will remove 2 circles

A of circles $= \pi 0.1^2 = 0.032\text{ m}^2$

Drilling hole will add side of a cylinder SA cylinder side $= 2\pi rh = 0.63$

$6 - 0.032 - 0.032 + 0.63 = 6.57$

So new surface area is

This is an increase of 0.57

$\frac{0.57}{6} = \frac{x}{100}$ It is a 9.5% increase