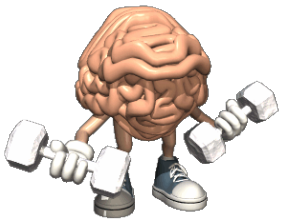
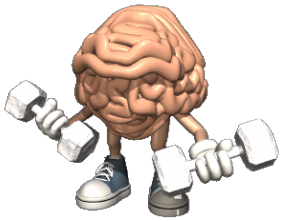
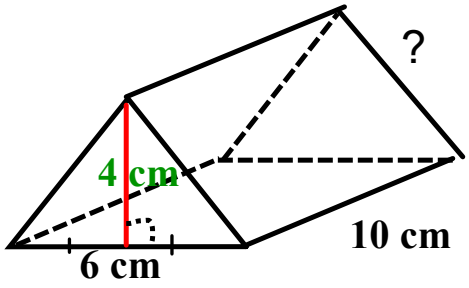
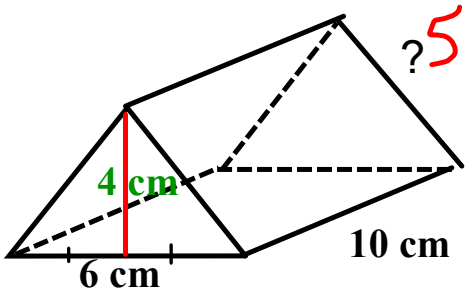


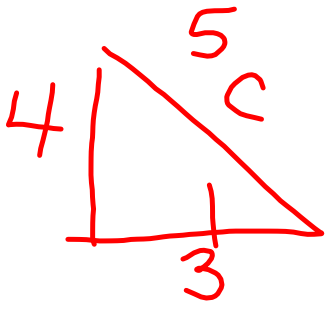
Grade 9 Warm Up



Calculate the total surface area of the following: (Show all work)



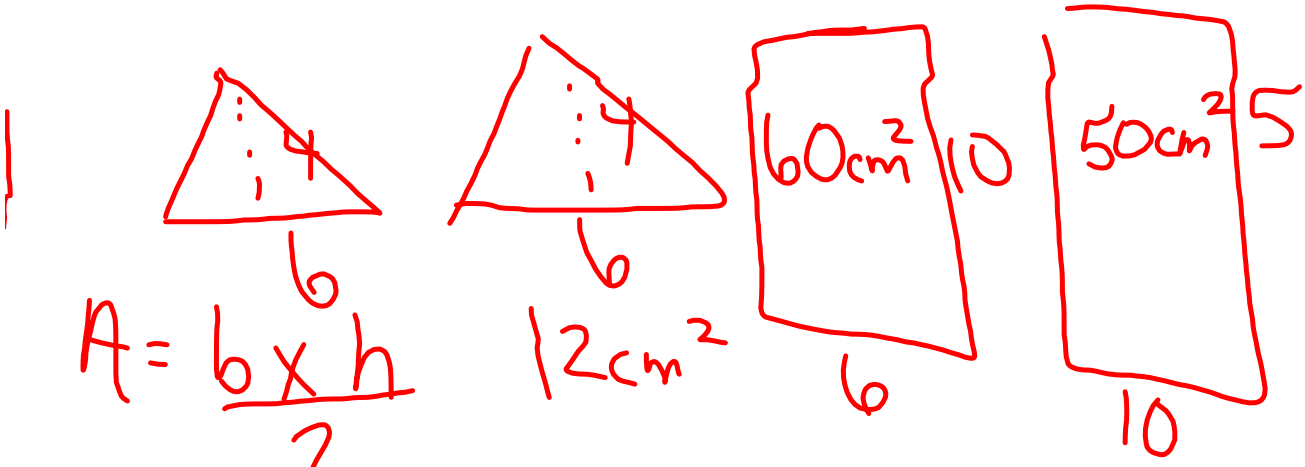




$3^2+4^2=c^2$

$9+16$

$25=c^2$



$A=\frac{6\times h}{2}$

$\frac{6\times 4}{2}$

$=12cm^2$

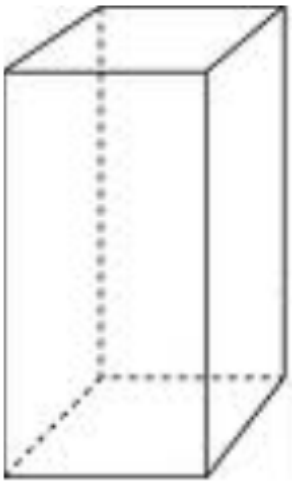
$12cm^2$

50cm² 5

10

184cm²

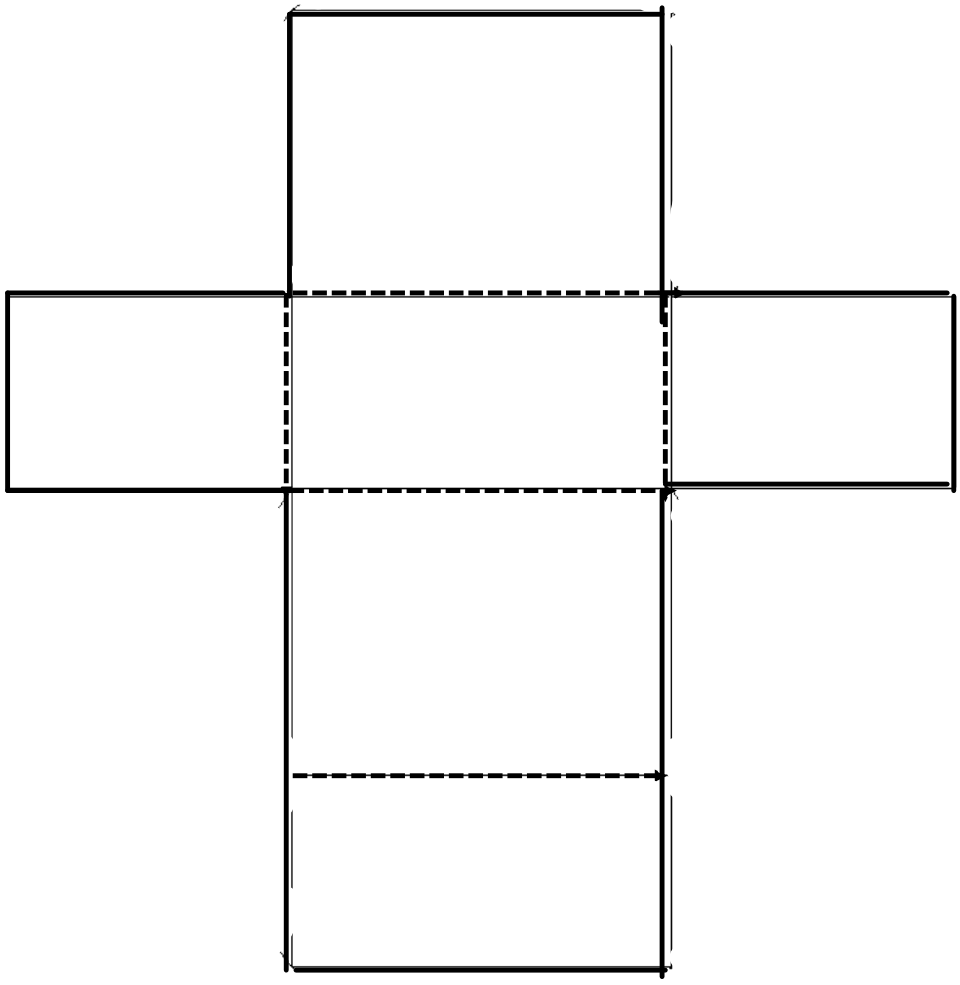
Rectangular Prism



Number of Faces:_ ___

Total Surface Area = 2 (top) + 2 (side) +t 2 (front)

Rectangular Prism



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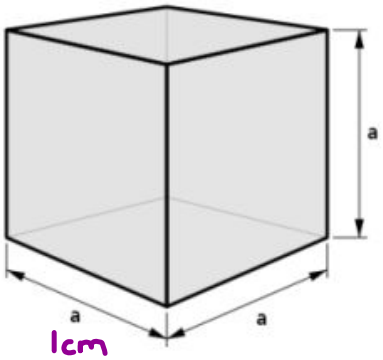
Cubes



Number of Faces: 6

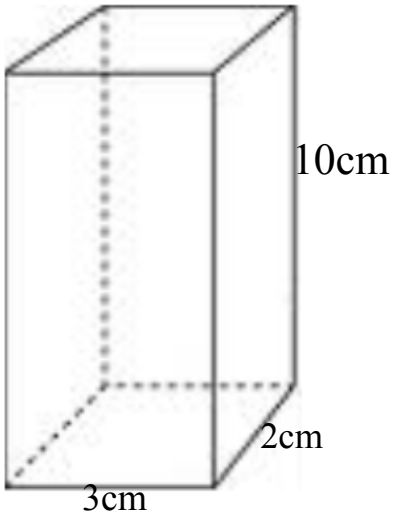
Surface Area

The surface area is the sum of all the areas of all the "shapes that cover the surface" of the object.

Faces

Find the Surface Area of The Rectangular Prism

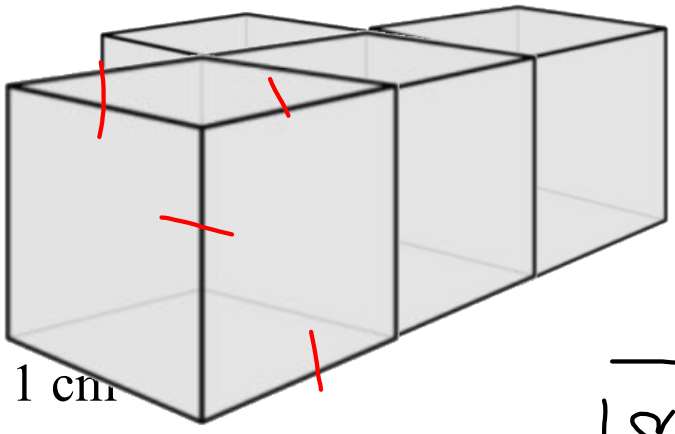
a)



Think in Pairs

Front = Back
Top = Bottom
Side = Side

Find the Surface Area of the Connected Cubes



6 faces
X 4 blocks
24 faces
6 overlap
18 faces

Method 1 (Think Individually about each shape)

4 cubes connected
* each have 6 faces

FIND THE AREA OF EACH FACE

4 X 6 faces = 24 faces

A= b x h

A = 1 cm x 1 cm

$A = 1\ cm^2$

$24\ A = 24\ cm^2$

BUT
WHAT HAPPENS WHEN YOU JOIN FACES?
Do you have to count where they join in "surface area"? NO

But have overlaps

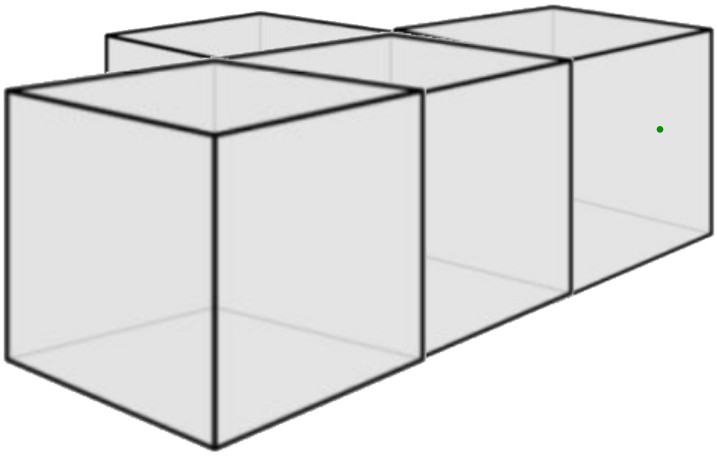
With every connected cube 2 faces disappear

3 overlaps so 6 faces disapear

Total surface area = $24\ cm^2 - 6cm^2$

$= 18cm^2$

Method 2: (Visualize the top/bottom, front/back, side/side)



How many faces do we see on the top?

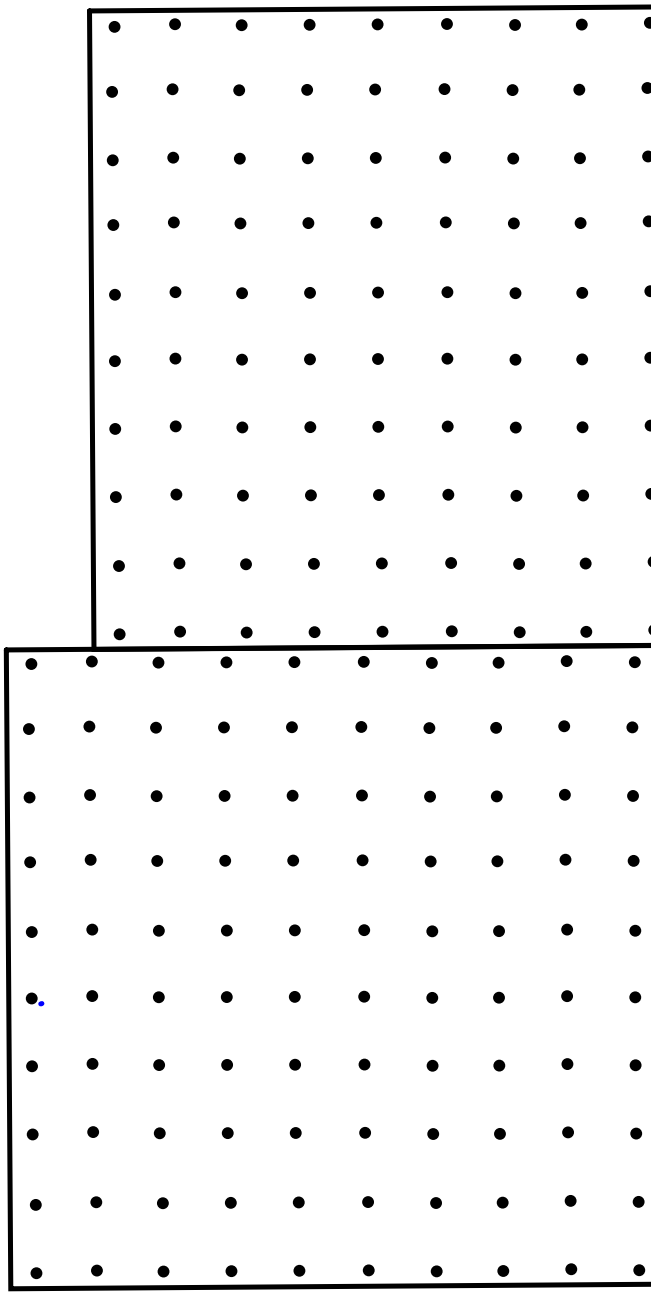
How many faces do we see on the bottom?

How many faces do we see on the front?

How many faces do we see on the back?

How many faces do we see on the left side?

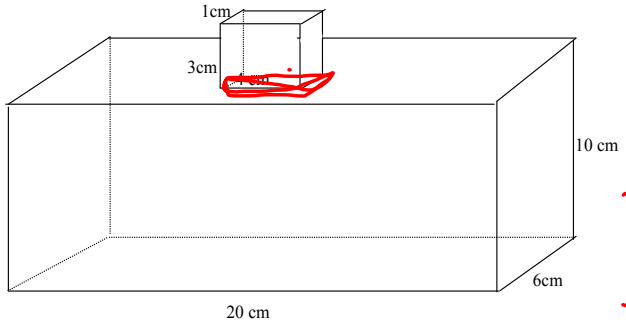
How many faces do we see on the right side?



Determine the surface area of the composite object.

What effect does the overlap have on the calculation of the surface area?

*count bottom



STEP 1: You can calculate all of the surface areas of the larger rectangular prism

front/back left/right top/bottom

Step 2: Then calculate all of the surface areas of the smaller rectangular prisms

front/back left/right top/bottom

Step 3: Is there an overlap? SO must subtract the "overlapped AREAs" recall overlap involes "two faces"

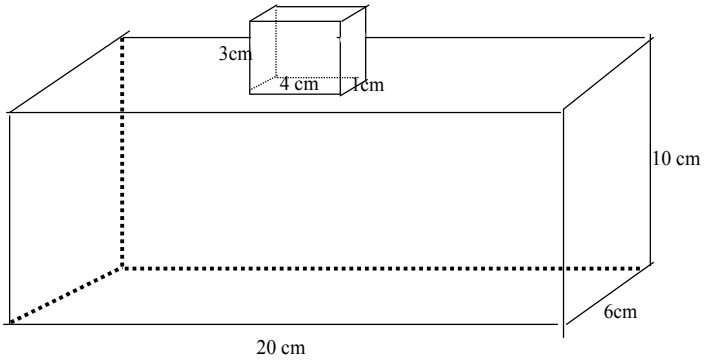
subtract 2 x (overlap area)

METHOD 2

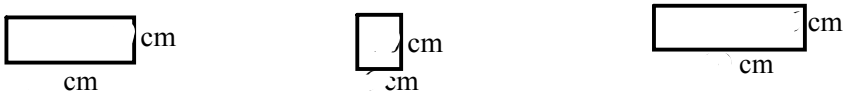
Determine the surface area of the composite object.

What effect does the overlap have on the calculation of the surface area?

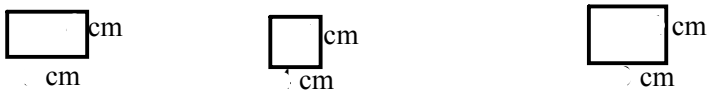
*count bottom



STEP 1: You can calculate all of the surface areas of the larger rectangular prism



Step 2: Then calculate all of the surface areas of the smaller rectangular prisms THAT IS EXPOSED



only one (4 cm x 1 cm) roof

Step 3: Is there an overlap? SO must subtract the "overlapped AREA" on the roof of the larger .....itis the same as the (4 cm x 1 cm) block

page 30 & 31

questions
4, 5

4a) Total # of faces = $6 \times 3 = 18$ faces

Area 1 face = 1 unit^2

2 overlaps $\Rightarrow$ $2(2) = 4$ faces disapear

Total SA = $18 - 4$
$= 14 \text{ (unit)}^2$