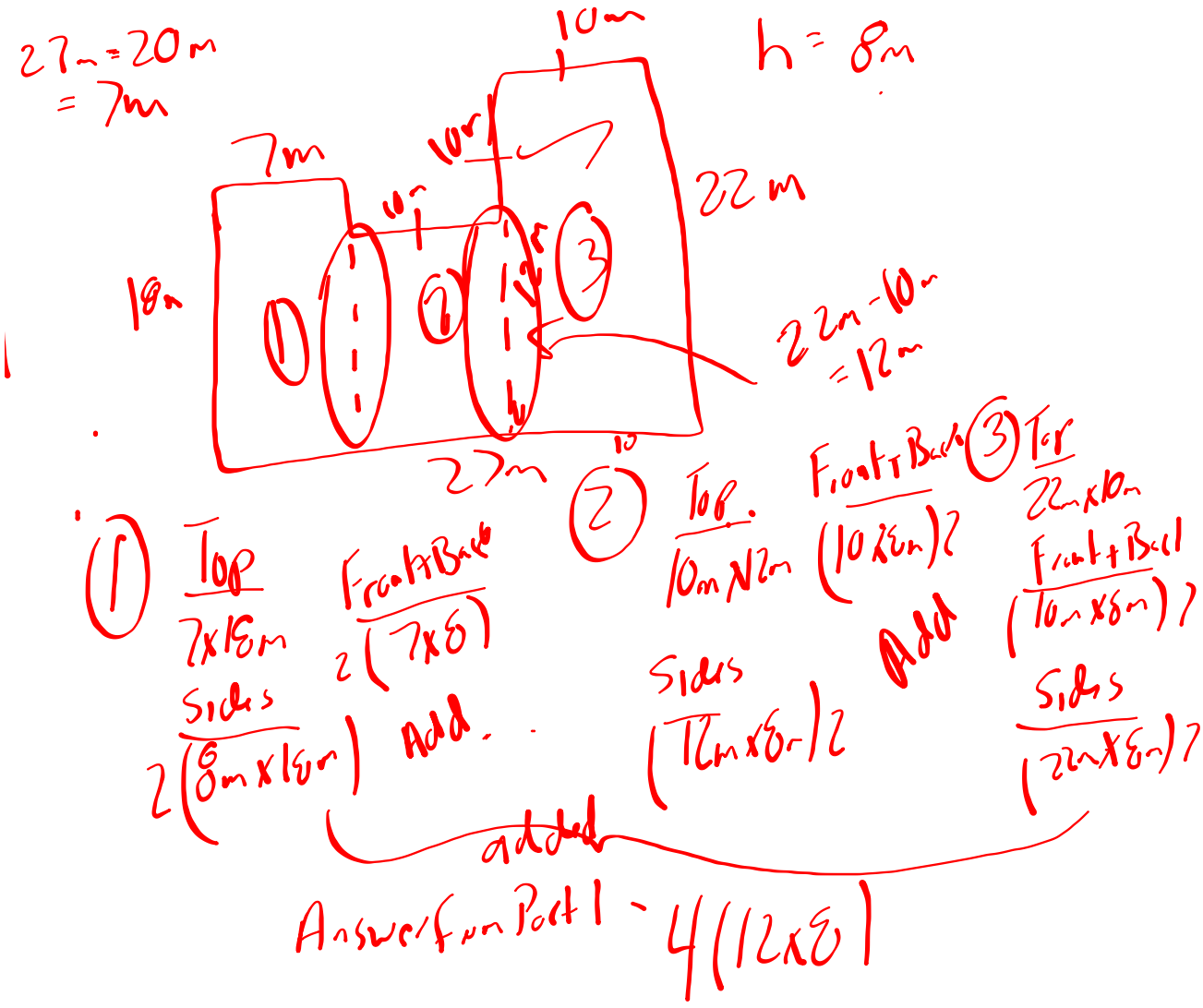
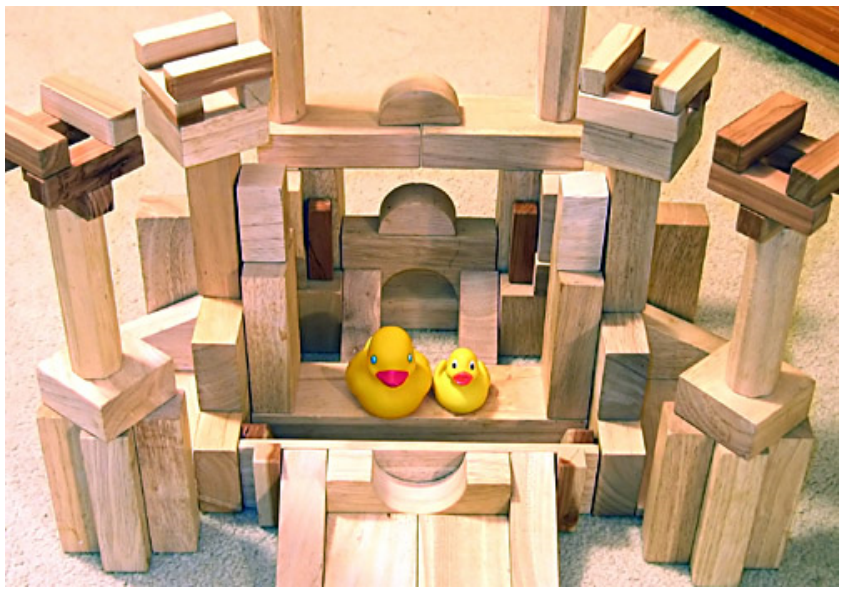
Section 1.4

Surface Area Of Other Composite Objects


27m = 20m + 7m
10m
h = 8m
7m
10m
22m
18m
22m - 10m = 12m
22m
10
① Top 7m x 18m
Front+Back 2(7x8)
Sides 2(8m x 18m)
Add.
② Top. 10m x 12m
Front+Back (10x8m)2
Sides (12m x 8m)2
③ Top 22m x 10m
Front+Back (10m x 8m)2
Sides (22m x 8m)2
Add
added
Answer from Part 1 - 4(12x8)

Surface area????



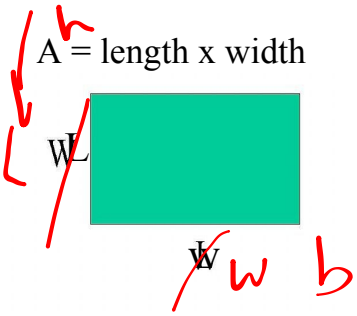
Other Composite Shapes

3-D shapes sitting on other 3-D shapes (This will cause an overlap meaning that the entire two or more shapes are not exposed to the surface

Area of Shapes

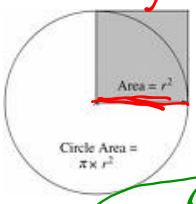
Area of a Rectangle

A = length x width



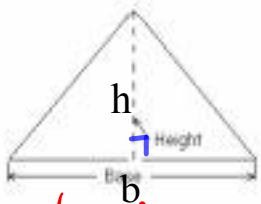
Area of a Circle

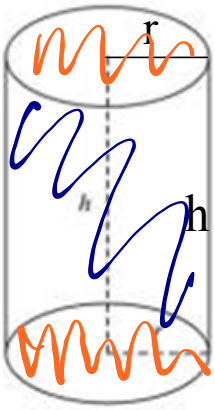
$A = \pi r^2$



Area of Triangle

$A = \frac{1}{2}$ (base x height)



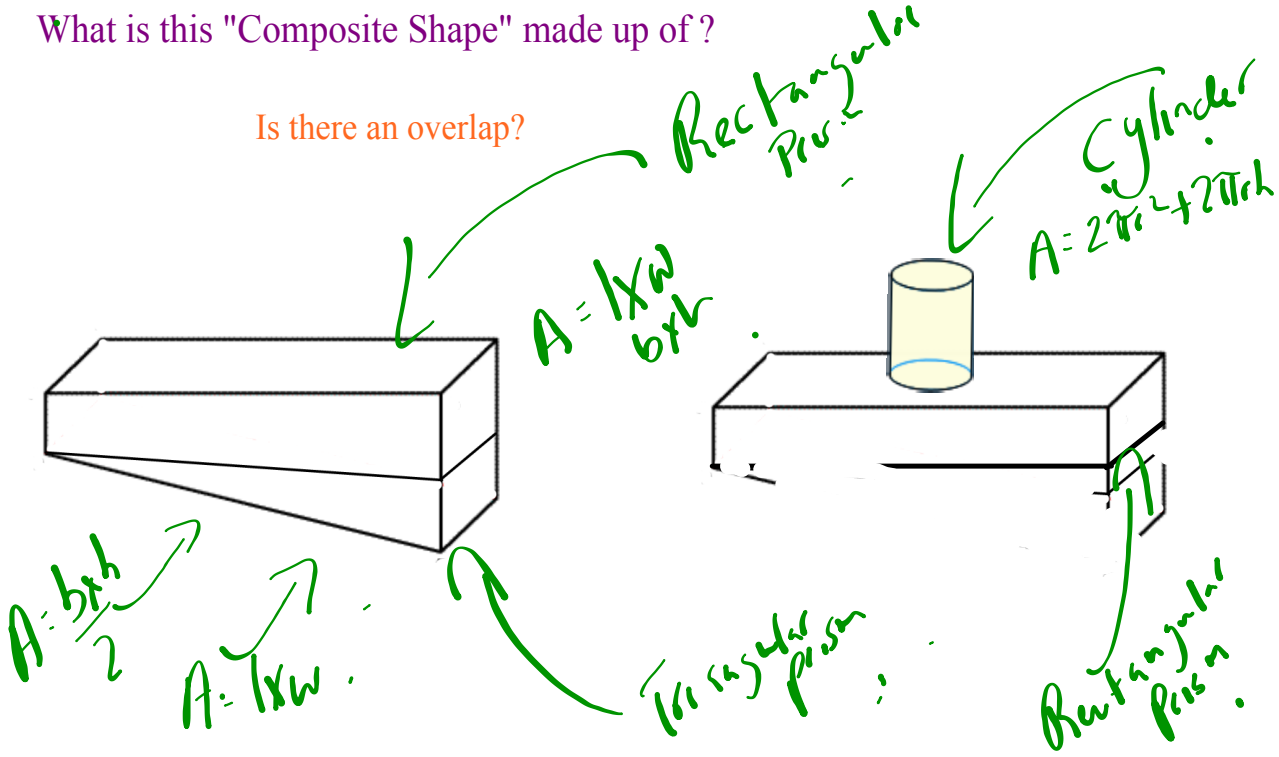


2 circles + rectangle

Surface Area of Cylinder = $2\pi r^2 + 2\pi rh$

What is this "Composite Shape" made up of ?

Is there an overlap?

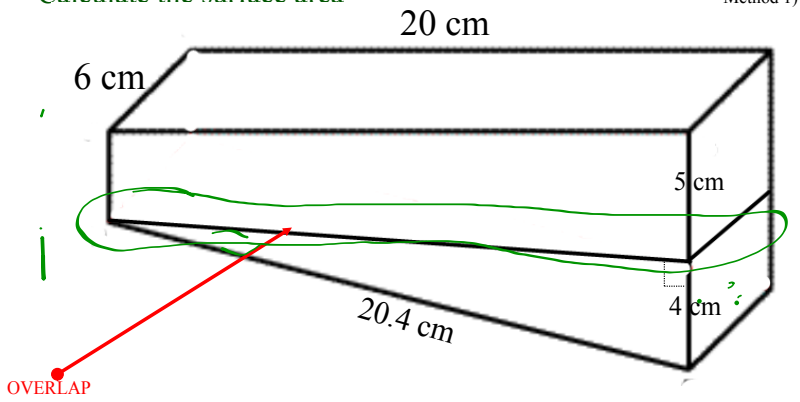


Rectangle

Answer:
Area of Both Prism - Area you can't see (two rectangles)

Calculate the surface area

Method 1)



Step 1) Calculate the overlap area BUT remember 2 faces are involved

A = 6 cm X 20 cm
= 120 cm^2

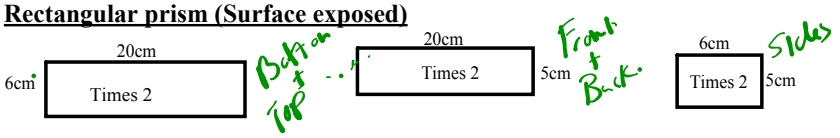
X 2

= 240 cm^2 total overlap

Double overlap

Step 2) Calculate the Surface area of each Prism INDIVIDUALLY

Rectangular prism (Surface exposed)



A = 6cm x 20 cm
= 120 cm^2

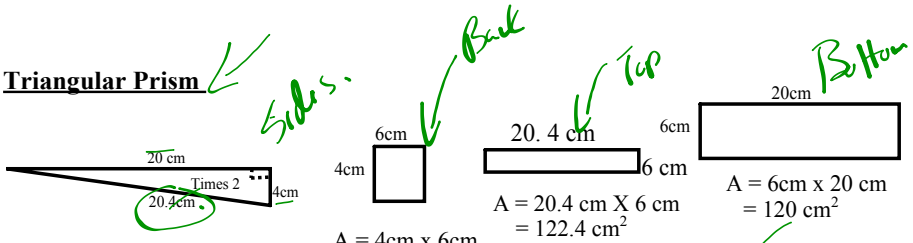
A =5cm x 20 cm
= 100 cm^2

A =5cm x 6 cm
= 30 cm^2

Area of rectangular prims = 2(120) cm^2 + 2(100 cm^2) + 2(30cm^2)
= 240 cm^2 + 200 cm^2 + 60cm^2
= 500 cm^2

Multiply then add

Triangular Prism



A = (20 cm X 4 cm) / 2
= (80 cm^2) / 2
= 40 cm^2

A = 4cm x 6cm
= 24 cm^2

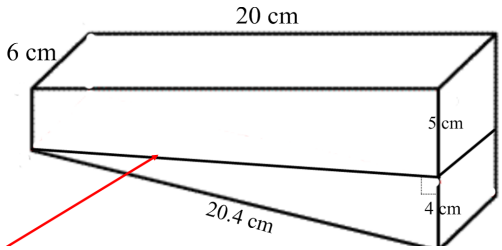
A = 20.4 cm X 6 cm
= 122.4 cm^2

A = 6cm x 20 cm
= 120 cm^2

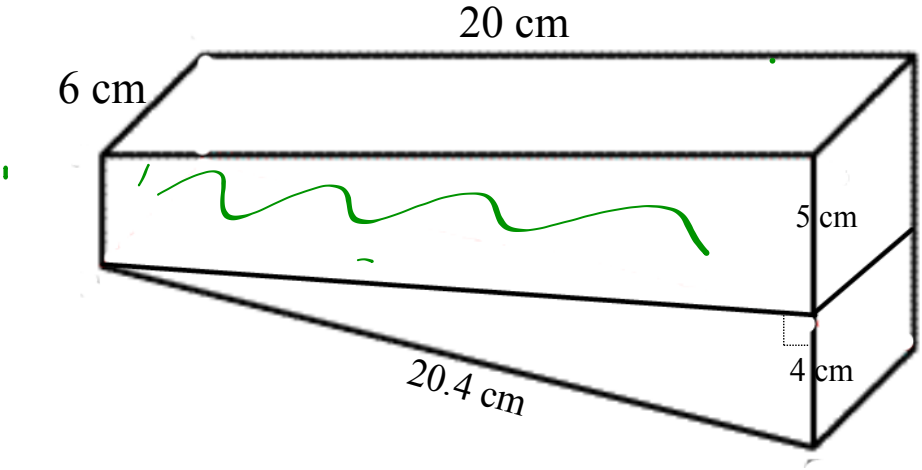
Area of triangular prism = 2(40 cm^2) + 24 cm^2 + 122.4cm^2 + 120cm^2
= 80cm^2 + 24 cm^2 + 122.4cm^2 + 120cm^2
= 346.4cm^2

Total Surface Area = Rectangular prism + Triangular Prism - OVERLAP
= (500cm^2) + 346.4 cm^2 - 240cm^2

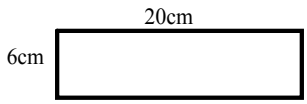
= 606.4 cm^2


20 cm
6 cm
5 cm
4 cm
20.4 cm

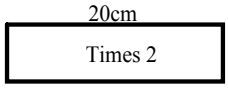
Calculate the surface area



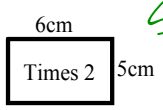
Rectangular prism (Surface exposed)



A = 6cm x 20 cm
= 120 cm^2



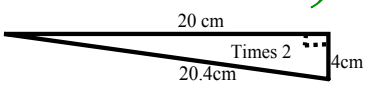
A =5cm x 20 cm
= 100 cm^2



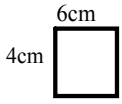
A =5cm x 6 cm
= 30 cm^2

Area of rectangular prims exposed = 120 cm^2 + 2(100 cm^2) + 2(30cm^2)
= 120 cm^2 + 200 cm^2 + 60cm^2
= 380 cm^2

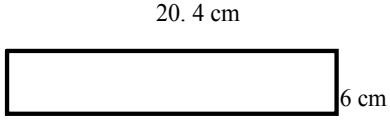
Triangular Prism (Surface Exposed)



A = (20 cm X 4 cm) / 2
= (80 cm^2) / 2
= 40 cm^2



A = 4cm x 6cm
= 24 cm^2



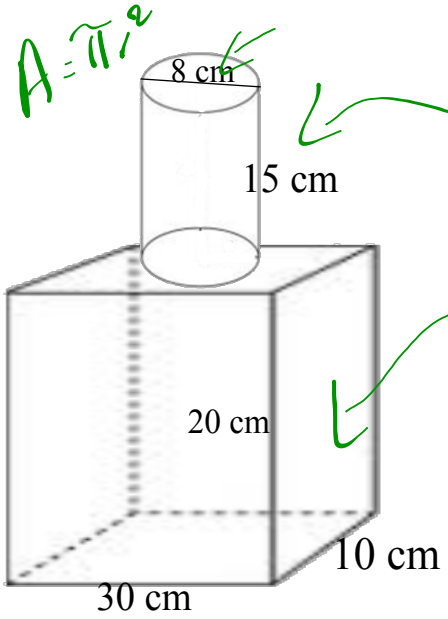
A = 20.4 cm X 6 cm
= 122.4 cm^2

Area of triangular prism exposed = 2(40 cm^2) + 24 cm^2 + 122.4cm^2
= 80cm^2 + 24 cm^2 + 122.4cm^2
= 226.4cm^2

Total Surface Area = Rectangular prism exposed + Triangular Prism Exposed
= (380cm^2) + 226.4 cm^2

= 606.4 cm^2

How much paint is needed to cover the following shape?



You try!!!

Overlap

Cylinder

Rectangular Prism

Total Surface Area =