Warm Up Grade 8

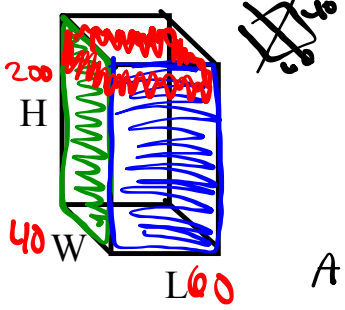
May 19, 2017

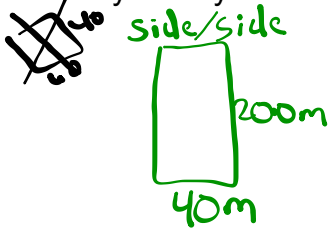
Whenever 3 dimensions are given, they are in the order: length, width and height.

Assessment Review

1) An office is in the shape of a right rectangular prism with length 60 m width 40 m and height 200 m. The top quarter of each vertical face of the building is to be covered with a large banner advertising a major sporting event. What is the total surface area to be covered with banners?

Always ask yourself "Do you use the top/bottom"?

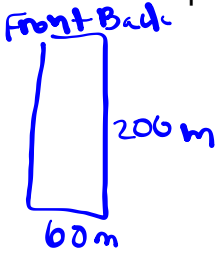




$A = L \times W$

$= 40m \times 200m$

$= 8000 m^2$



$A = L \times W$

$= 60m \times 200m$

$= 12000 m^2$

Total SA = 2 sides + 2 fronts

$= 2(8000m^2) + 2(12000m^2)$

$= 16000m^2 + 24000m^2$

$= 40000 m^2$

But use only $\frac{1}{4}$ of this for banner

$\frac{1}{4}$ of $40000m^2$

$= 10000m^2$ for Banner

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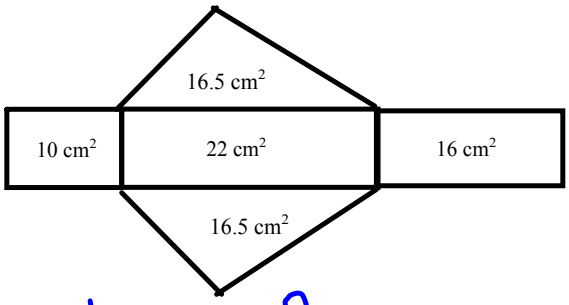
4.

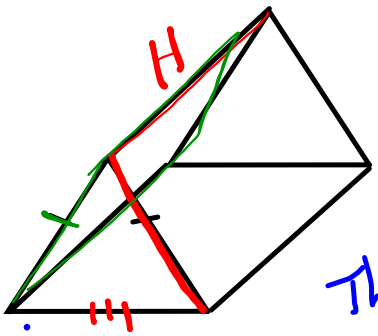


Find the surface area by adding the areas of all faces

SA = 10 + 22 + 16 + 16.5 + 16.5
= 48 + 33
= 81

or 10 + 22 + 16 + 2 × 16.5
= 48 + 33
= 81 cm²

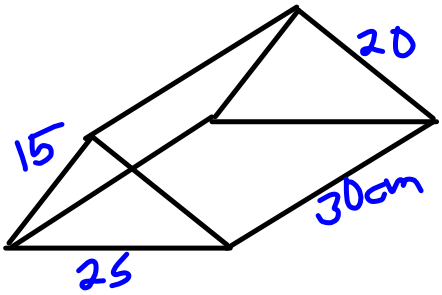
5.

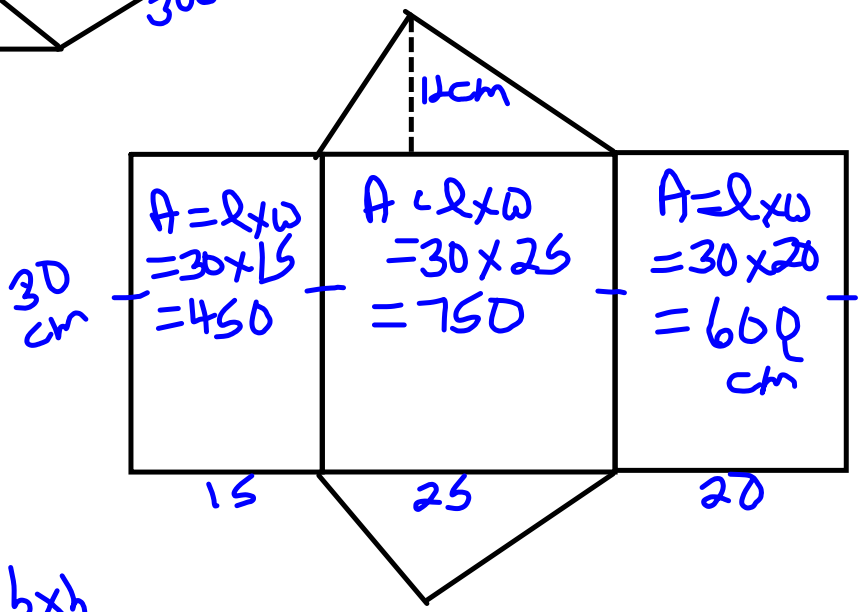


The bases of any prism are congruent and share the same area

The rectangles on the sides are congruent (since the lengths of the 2 sides in the triangle are the same).

6.





$A_\Delta = \frac{b \times h}{2}$

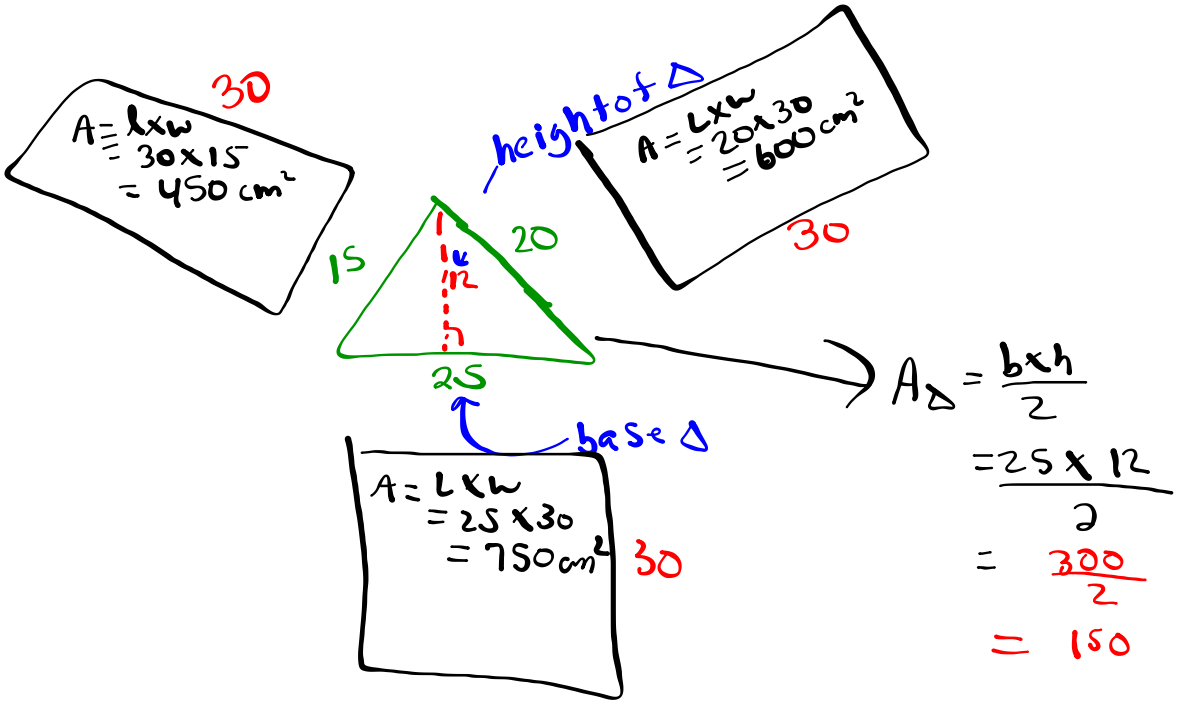
$= \frac{25 \times 12}{2} = \frac{300}{2}$

$= 150 cm^2$

$SA = 2 \times 150 + 450 + 750 + 600$

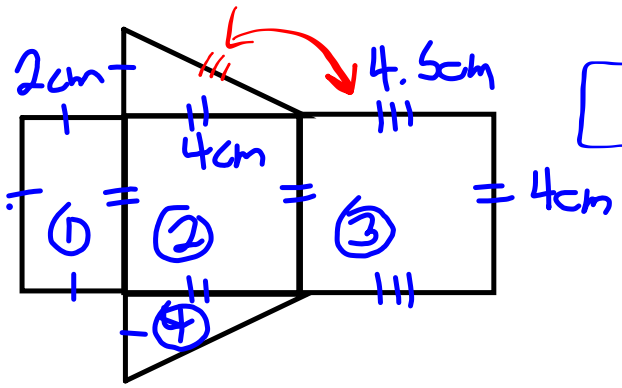
$= 300 + 450 + 750 + 600$

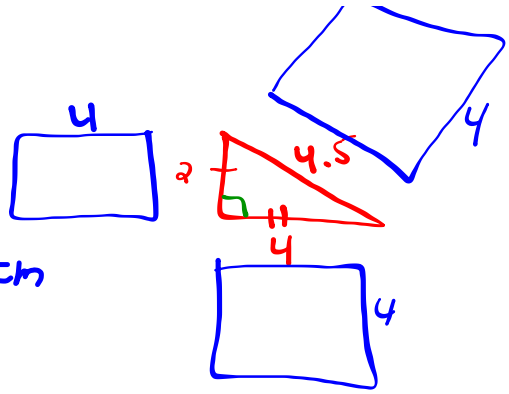
$= 2100 cm^2$


30
A = lxw
= 30x15
= 450 cm²
15
height of Δ
A = LxW
= 20x30
= 600cm²
30
20
12
h
25
base Δ
A = LxW
= 25x30
= 750cm²
30
$A_\Delta = \frac{b \times h}{2}$
$= \frac{25 \times 12}{2}$
$= \frac{300}{2}$
$= 150$

Total SA = 2Δ + □ + □ + □

7. a)





$A_1 = l \times w$
$= 4 \times 2$
$= 8 cm$

$A_2 = l \times w$
$= 4 \times 4$
$= 16 cm^2$

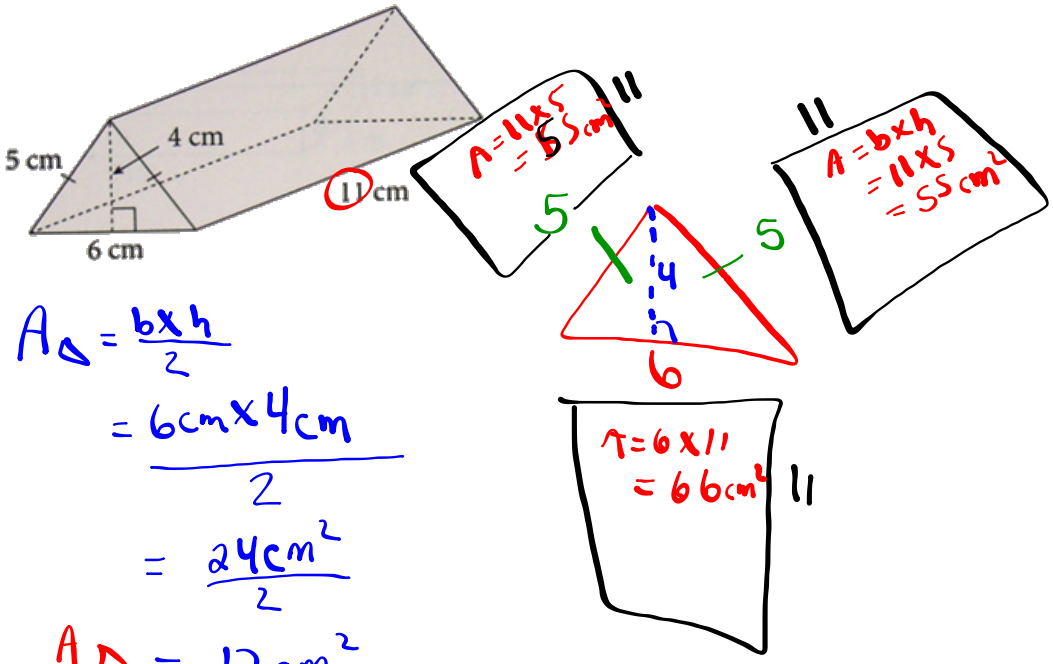
$A_3 = l \times w$
$= 4.5 \times 4$
$= 18 cm^2$

$A_4 = \frac{b \times h}{2}$
$= \frac{4 \times 2}{2}$
$= 4 cm^2$

2 △ □ □ □

$SA = 2 \times 4 + 8 + 16 + 18$
$= 8 + 8 + 16 + 18$
$= 50 cm^2$

Sketch a net of this right triangular prism.
What is its surface area?



$A_\Delta = \frac{b \times h}{2}$

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

$= \frac{24cm^2}{2}$

$A_\Delta = 12cm^2$

Total SA = 2△ + □ + □ + □

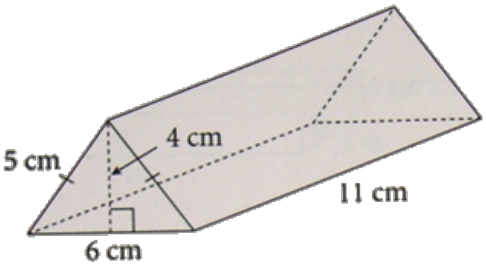
$= 2(12cm^2) + (66cm^2) + (55cm^2) + (55cm^2)$

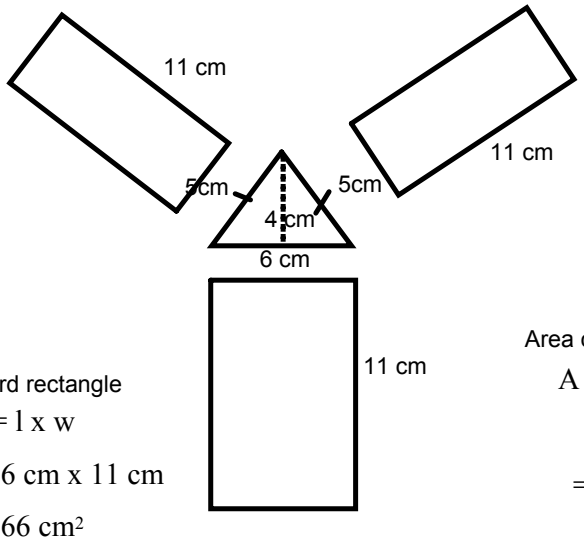
$= 24cm^2 + 66cm^2 + 55cm^2 + 55cm^2$

$= 200\ cm^2$

Homework Solutions

Sketch a net of this right triangular prism.
What is its surface area?





first rectangle

$A = l \times w$

$= 5 \text{ cm} \times 11 \text{ cm}$

$= 55 \text{ cm}^2$

second rectangle

$A = l \times w$

$= 5 \text{ cm} \times 11 \text{ cm}$

$= 55 \text{ cm}^2$

Third rectangle

$A = l \times w$

$= 6 \text{ cm} \times 11 \text{ cm}$

$= 66 \text{ cm}^2$

Area of Triangle face

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

$$= \frac{6 \text{ cm} \times 4 \text{ cm}}{2}$$

$$= \frac{24 \text{ cm}^2}{2}$$

$= 12 \text{ cm}^2$

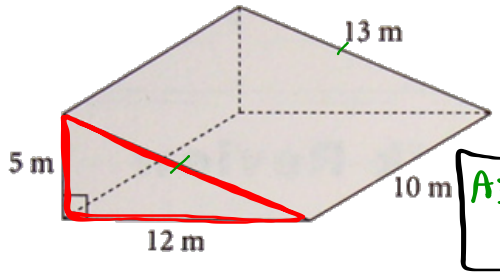
Total S.A = 2 triangles + rectangle +rectangle + rectangle

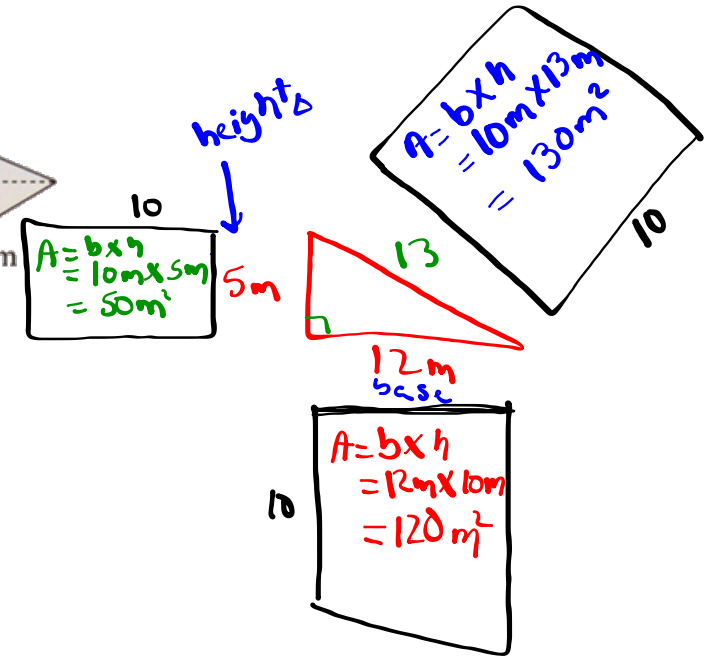
$= 2 (12 \text{ cm}^2) + 55 \text{ cm}^2 + 55 \text{ cm}^2 + 66 \text{ cm}^2$

$= 24 \text{ cm}^2 + 55 \text{ cm}^2 + 55 \text{ cm}^2 + 66 \text{ cm}^2$

$= 200 \text{ cm}^2$

Sketch a net of this right triangular prism.
What is its surface area?





$A_\Delta = \frac{b \times h}{2}$

$= \frac{12m \times 5m}{2}$

$= \frac{60m^2}{2}$

$= 30m^2$

Total SA = 2Δ + □ + □ + □

$= 2(30m^2) + 50m^2 + 120m^2 + 130m^2$

$= 60m^2 + 50m^2 + 120m^2 + 130m^2$

$= 360m^2$

Class/Homework

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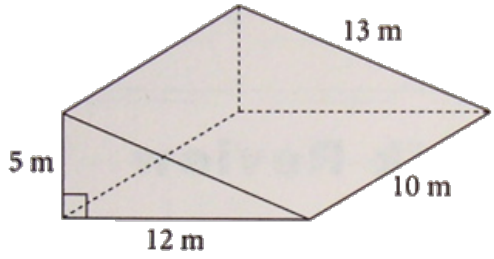
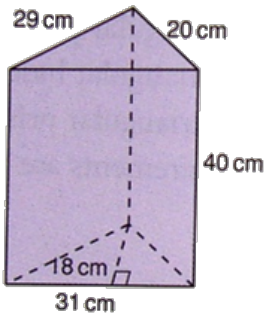
Sketch a net of this right triangular prism.
What is its surface area?



Sketch a net of this right triangular prism.
What is its surface area?



Attachments

Review of Surface area of 2D Shape Grade 8 Unit 4 PDF.pdf