

Warm Up Grade 8

Date: _____



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"?

$A_D = L \times H$
 $= 60m \times 200m$
 $= 12\,000m^2$
 $\times 2$ Front/Back

 $24\,000m^2$

$A_D = w \times H$
 $= 40m \times 200m$
 $= 8\,000m^2$
 $\times 2$ L/R

 $16\,000m^2$

Total SA of sides = $24\,000m^2 + 16\,000m^2$

$= 40\,000m^2$ (If covered all sides of whole walls)

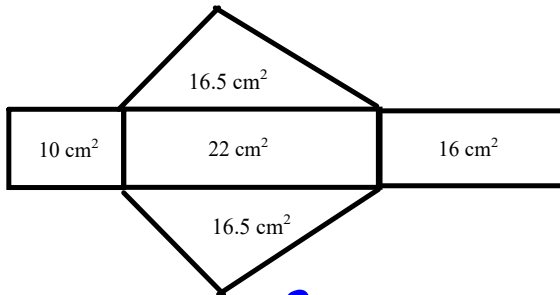
But only cover $\frac{1}{4}$ of this area

Banner = $\frac{1}{4}$ of $40\,000m^2$
 $= \frac{40\,000m^2}{4}$
 $= 10\,000m^2$

10 000m² of the building is covered with a banner.

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4.

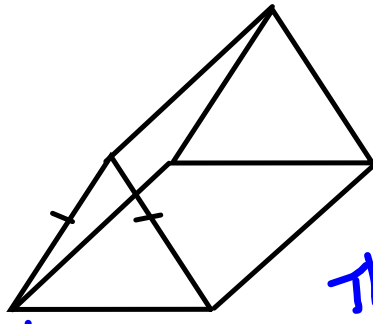


Find the surface area by adding the areas of all faces

$$\begin{aligned} SA &= 10 + 22 + 16 + 16.5 + 16.5 \\ &= 48 + 33 \\ &= 81 \end{aligned}$$

$$\begin{aligned} \text{or } SA &= 10 + 22 + 16 + 2 \times 16.5 \\ &= 48 + 33 \\ &= 81 \end{aligned}$$

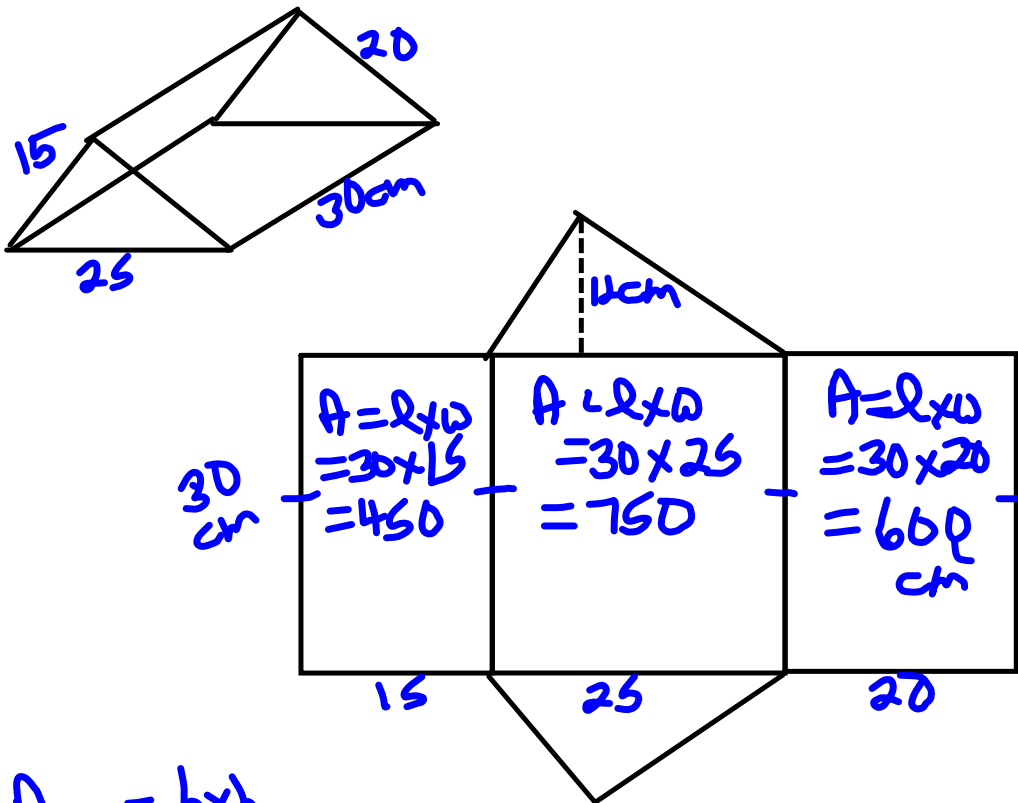
5.



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).

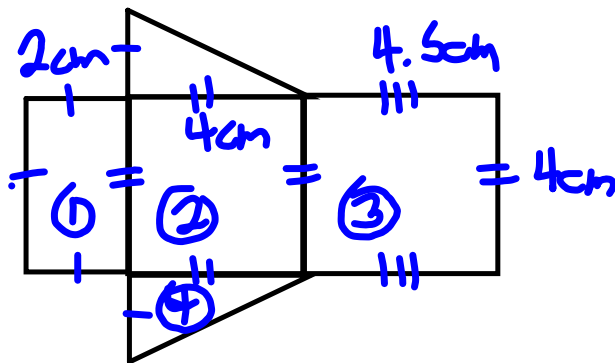
6.



$$\begin{aligned}
 A_{\Delta} &= \frac{b \times h}{2} \\
 &= \frac{25 \times 12}{2} = \frac{300}{2} \\
 &= 150 \text{ cm}^2
 \end{aligned}$$

$$\begin{aligned}
 SA &= 2 \times 150 + 450 + 750 + 600 \\
 &= 300 + 450 + 750 + 600 \\
 &= 2100 \text{ cm}^2
 \end{aligned}$$

7. a)



$$A_1 = l \times w \\ = 4 \times 2 \\ = 8 \text{ cm}$$

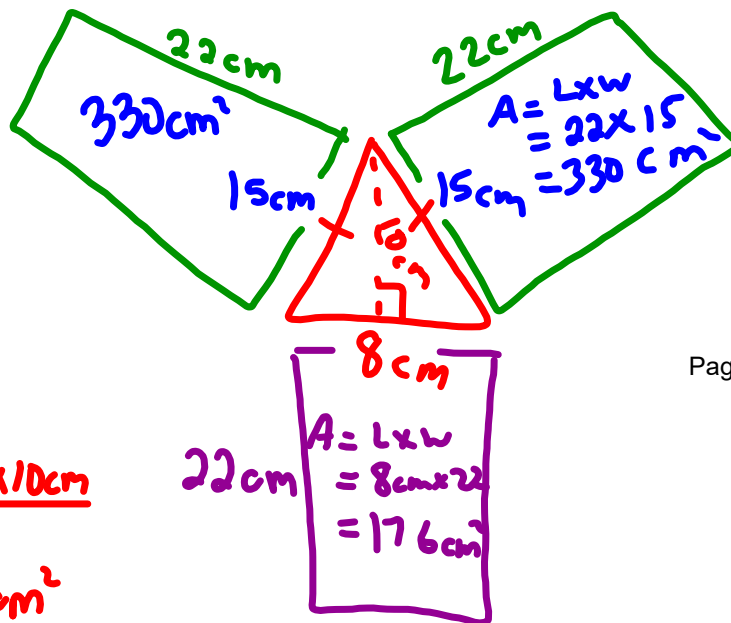
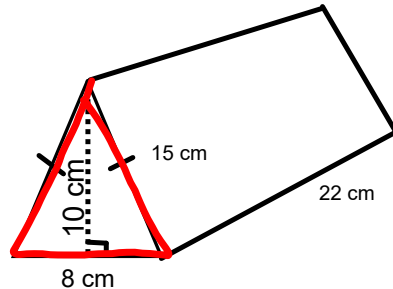
$$A_2 = l \times w \\ = 4 \times 4 \\ = 16 \text{ cm}^2$$

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

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

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

Sketch the faces of this right triangular prism.
What is its surface area?



$$\begin{aligned}
 A_{\Delta} &= \frac{b \times h}{2} \\
 &= \frac{8 \text{ cm} \times 10 \text{ cm}}{2} \\
 &= \frac{80 \text{ cm}^2}{2} \\
 &= 40 \text{ cm}^2
 \end{aligned}$$

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#7b, #8(a,b,c), #9ab, #10

$$\begin{aligned}
 \text{Total SA} &= 2\Delta + \square + \square + \square \\
 &= 2(40 \text{ cm}^2) + 176 \text{ cm}^2 + 330 \text{ cm}^2 + 330 \text{ cm}^2 \\
 &= 80 \text{ cm}^2 + 176 \text{ cm}^2 + 330 \text{ cm}^2 + 330 \text{ cm}^2 \\
 &= 916 \text{ cm}^2
 \end{aligned}$$

Class/Homework

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#7ab, ,#8(a,b,c,d), #9abc, #10a



If need more ##10 (bc), 13, 14,

Attachments

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