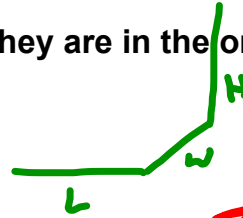


Warm Up Grade 8

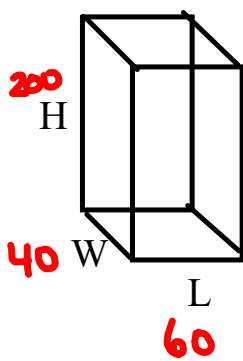
Date: _____



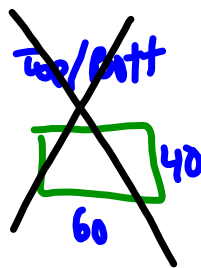
Whenever 3 dimensions are given, they are in the order:
length, width and height.

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"?



$$\begin{aligned}
 A &= L \times W \\
 &= 40 \text{ m} \times 200 \text{ m} \\
 &= 8\,000 \text{ m}^2 \\
 &\quad \text{X 2 faces} \\
 &= 16\,000 \text{ m}^2
 \end{aligned}$$



$$\begin{aligned}
 A &= L \times W \\
 &= 60 \text{ m} \times 200 \text{ m} \\
 &= 12\,000 \text{ m}^2 \\
 &\quad \text{X 2 faces} \\
 &= 24\,000 \text{ m}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{Total SA Building walls} &= 16\,000 \text{ m}^2 + 24\,000 \text{ m}^2 \\
 &= 40\,000 \text{ m}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{SA Area of Banner} &= 40\,000 \text{ m}^2 \div 4 \\
 &= 10\,000 \text{ m}^2
 \end{aligned}$$

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?"

Front/Back

L/R

No Banner
~~Top/Bottom~~

$$A_D = L \times H$$

$$= 60\text{m} \times 200\text{m}$$

$$= 12\,000\text{m}^2$$

$\times 2$ Front/Back

$$24\,000\text{m}^2$$

$$A_D = w \times H$$

$$= 40\text{m} \times 200\text{m}$$

$$= 8\,000\text{m}^2$$

$\times 2$ L/R

$$16\,000\text{m}^2$$

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

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

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

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

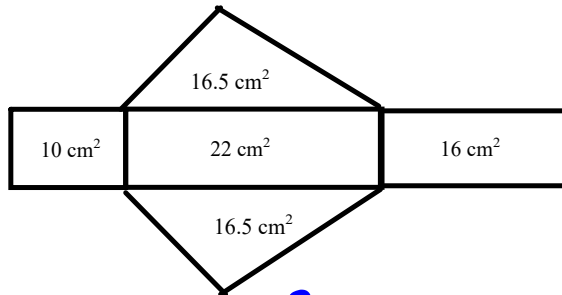
$$= \frac{40\,000\text{m}^2}{4}$$

$$= \boxed{10\,000\text{m}^2}$$

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

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4.

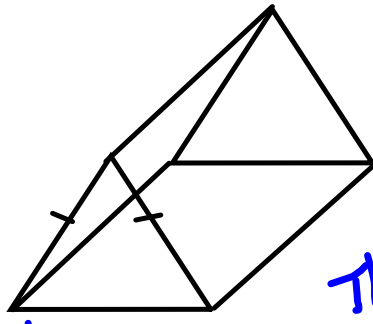


Find the surface area by adding the areas of all faces

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

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

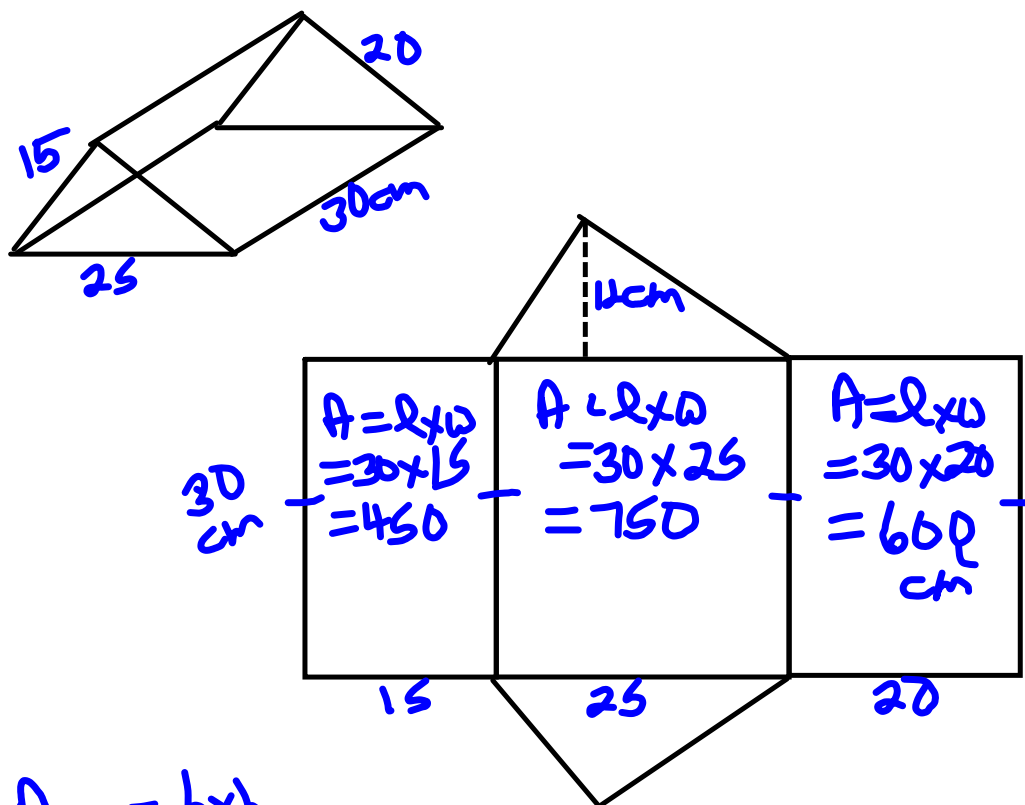
5.



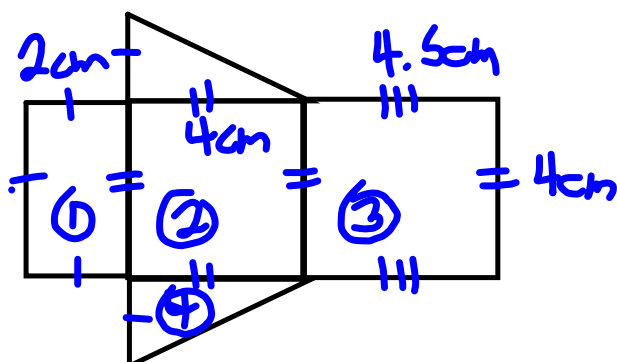
The bases of any prism are congruent and share the same area

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

6.



7. a)



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

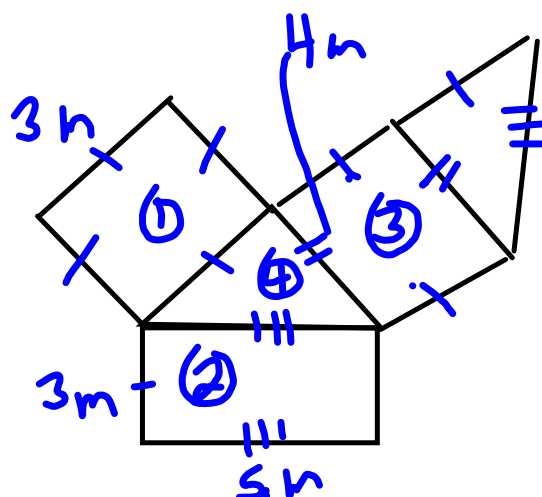
$$A_2 = l \times w \\ = 4 \times 4 \\ = 16 \text{ cm}^2$$

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

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

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

7b)



$$A_1 = l \times w \\ = 3 \times 3 \\ = 9 \text{ m}^2$$

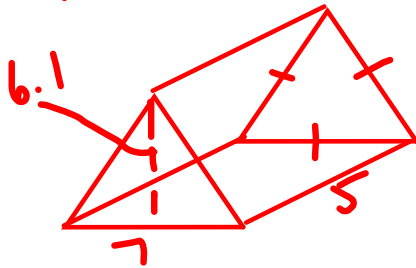
$$A_2 = l \times w \\ = 3 \times 5 \\ = 15 \text{ m}^2$$

$$A = l \times w \\ = 4 \times 3 \\ = 12 \text{ m}^2$$

$$A_4 = \frac{b \times h}{2} \\ = \frac{4 \times 3}{2} \\ = 6 \text{ m}^2$$

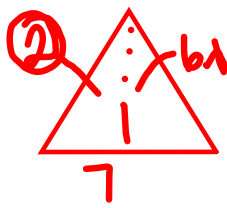
$$SA = 2 \times 6 + 9 + 15 + 12 \\ = 12 + 9 + 15 + 12 \\ = 48 \text{ m}^2$$

8. Prism A

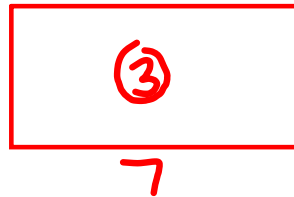


Front & Back

Sides



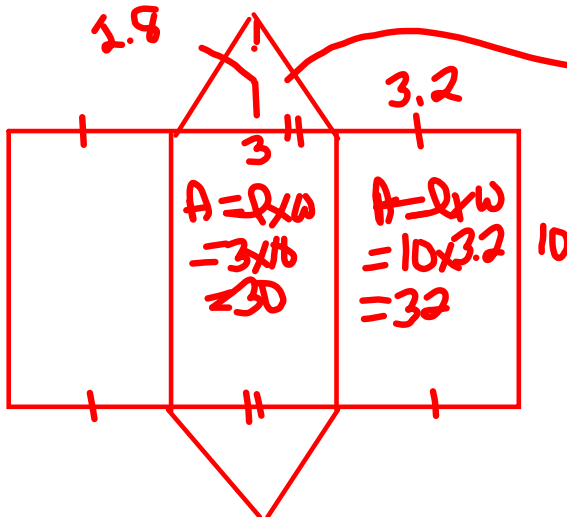
$$\begin{aligned}
 A &= \frac{b \times h}{2} \\
 &= \frac{7 \times 6.1}{2} \\
 &= \frac{42.7}{2} \\
 &= 21.35
 \end{aligned}$$



$$\begin{aligned}
 A &= l \times w \\
 &= 7 \times 5 \\
 &= 35
 \end{aligned}$$

$$\begin{aligned}
 SA &= 2 \times 21.35 + 3 \times 35 \\
 &= 42.7 + 105 \\
 &= 147.7 \text{ cm}^2
 \end{aligned}$$

b)



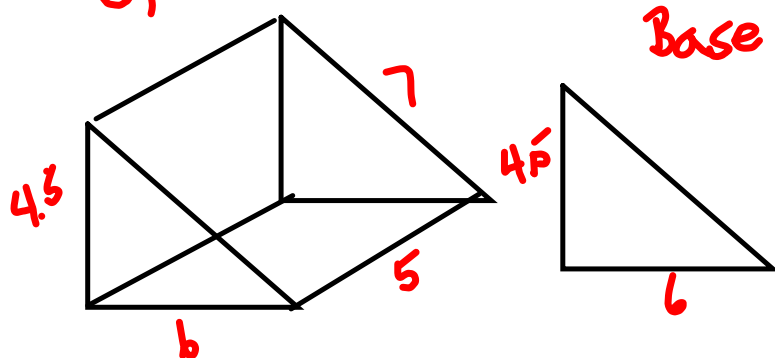
$$\begin{aligned}
 A &= l \times w \\
 &= 3 \times 10 \\
 &= 30
 \end{aligned}$$

$$\begin{aligned}
 A &= l \times w \\
 &= 10 \times 3.2 \\
 &= 32
 \end{aligned}$$

$$\begin{aligned}
 A &= \frac{b \times h}{2} \\
 &= \frac{3 \times 2.8}{2} \\
 &= \frac{8.4}{2} \\
 &= 4.2
 \end{aligned}$$

$$\begin{aligned}
 SA &= 2 \times 32 + 30 + 2 \times 4.2 \\
 &= 64 + 30 + 8.4 \\
 &= 102.2 \text{ cm}^2
 \end{aligned}$$

8 c)



$$\begin{aligned}
 A &= \frac{2 \times 6}{2} \\
 &= \frac{6 \times 4.5}{2} \\
 &= \frac{27}{2} \\
 &= 13.5 \text{ cm}^2
 \end{aligned}$$

Sides

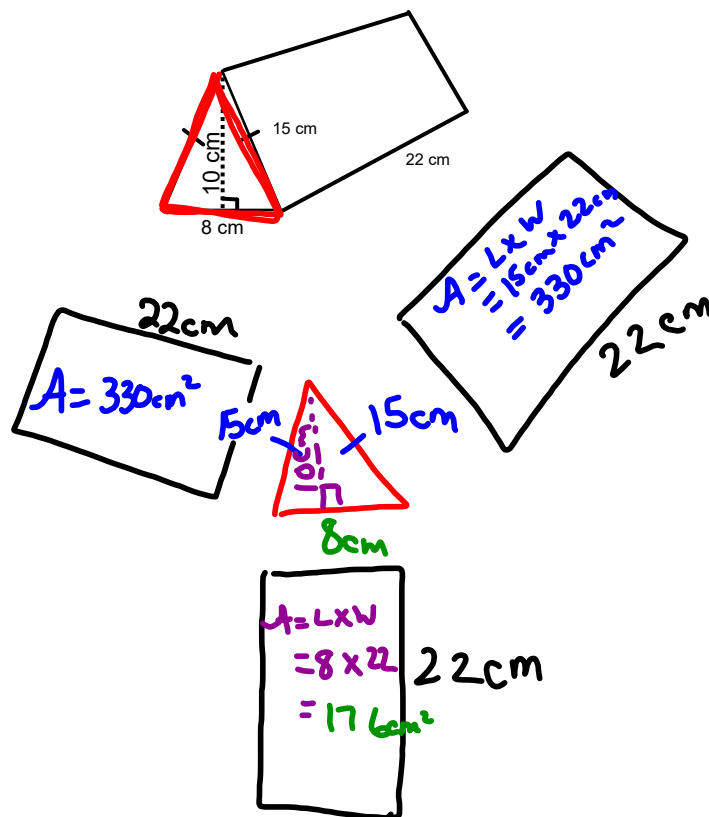
$$\begin{aligned}
 A &= l \times w \\
 &= 6 \times 5 \\
 &= 30
 \end{aligned}$$

$$\begin{aligned}
 A &= l \times w \\
 &= 5 \times 4.5 \\
 &= 22.5
 \end{aligned}$$

$$\begin{aligned}
 A &= l \times w \\
 &= 7 \times 5 \\
 &= 35
 \end{aligned}$$

$$\begin{aligned}
 \text{Total SA} &= 2(13.5) + 30 + 22.5 + 35 \\
 &= 27 + 30 + 22.5 + 35 \\
 &= 114.5 \text{ cm}^2
 \end{aligned}$$

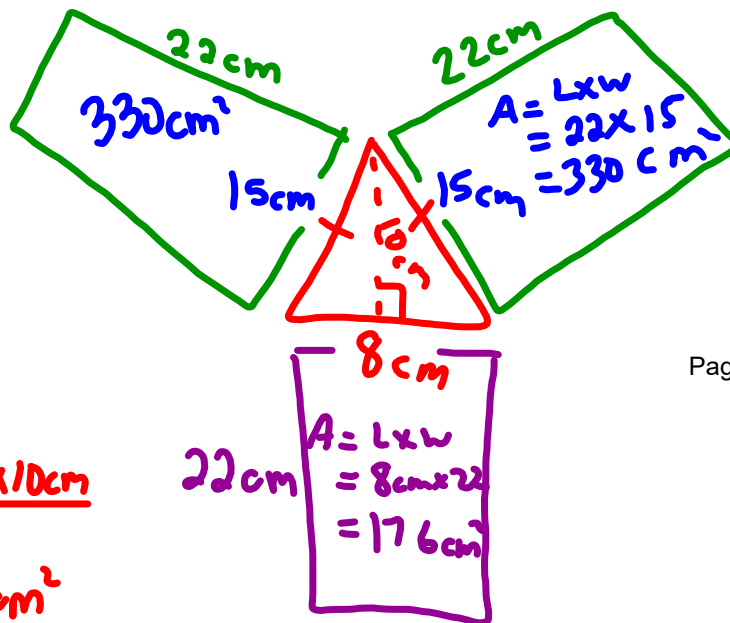
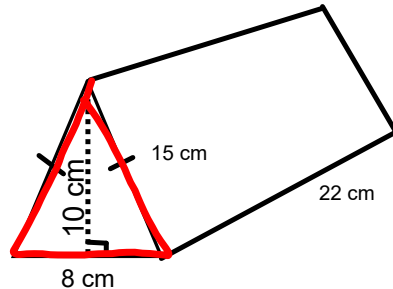
Sketch the faces of this right triangular prism.
What is its surface area?



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

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

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



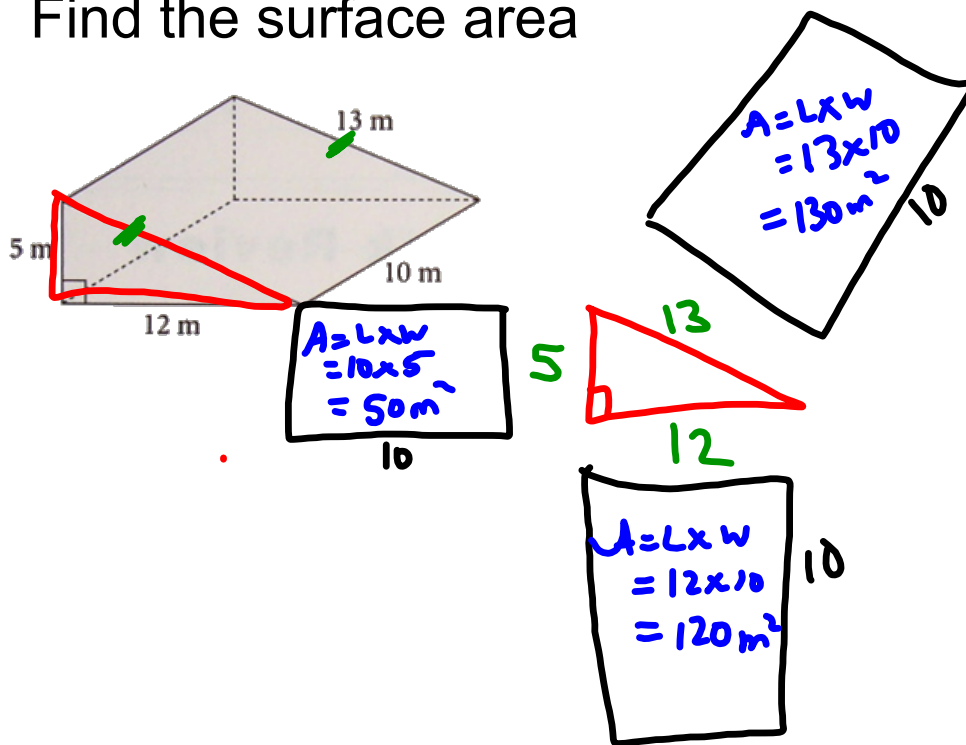
$$\begin{aligned}
 A_{\Delta} &= \frac{b \times h}{2} \\
 &= \frac{8 \text{ cm} \times 10 \text{ cm}}{2} \\
 &= \frac{80 \text{ cm}^2}{2} \\
 &= 40 \text{ cm}^2
 \end{aligned}$$

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

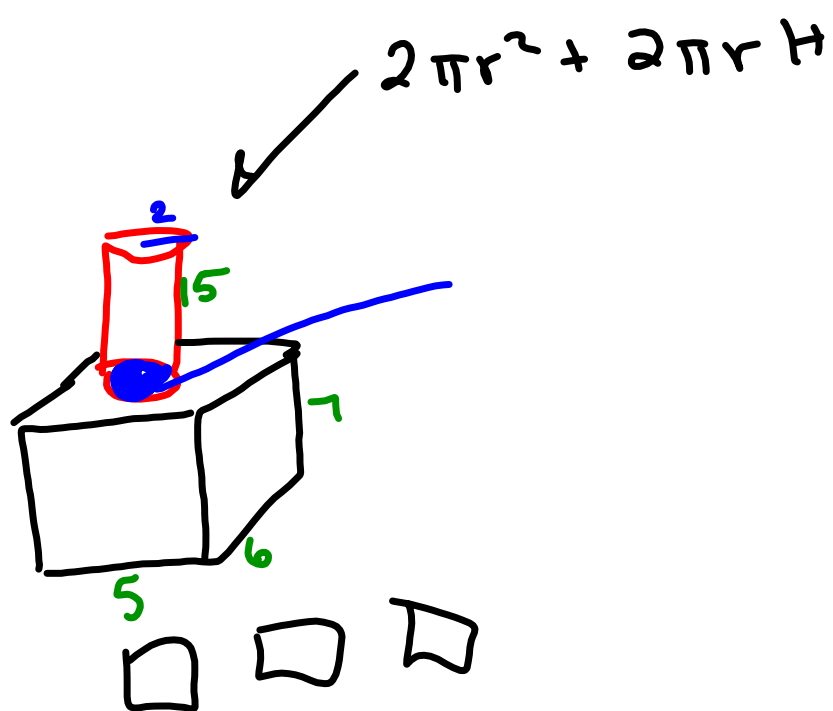
$$\begin{aligned}
 \text{Total SA} &= 2\Delta + \square + \square + \square \\
 &= 2(40 \text{ cm}^2) + 176 \text{ cm}^2 + 330 \text{ cm}^2 + 330 \text{ cm}^2 \\
 &= 80 \text{ cm}^2 + 176 \text{ cm}^2 + 330 \text{ cm}^2 + 330 \text{ cm}^2 \\
 &= 916 \text{ cm}^2
 \end{aligned}$$

Find the surface area



$$\begin{aligned}
 A_{\Delta} &= \frac{b \times h}{2} \\
 &= \frac{12 \text{ m} \times 5 \text{ m}}{2} \\
 &= \frac{60 \text{ m}^2}{2} \\
 &= 30 \text{ m}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{Total SA}_{\Delta \text{pr}} &= 2\Delta + \square + \square + \square \\
 &= 2(30 \text{ m}^2) + 130 \text{ m}^2 + 120 \text{ m}^2 + 50 \text{ m}^2 \\
 &= 60 \text{ m}^2 + 130 \text{ m}^2 + 120 \text{ m}^2 + 50 \text{ m}^2 \\
 &= 360 \text{ m}^2
 \end{aligned}$$



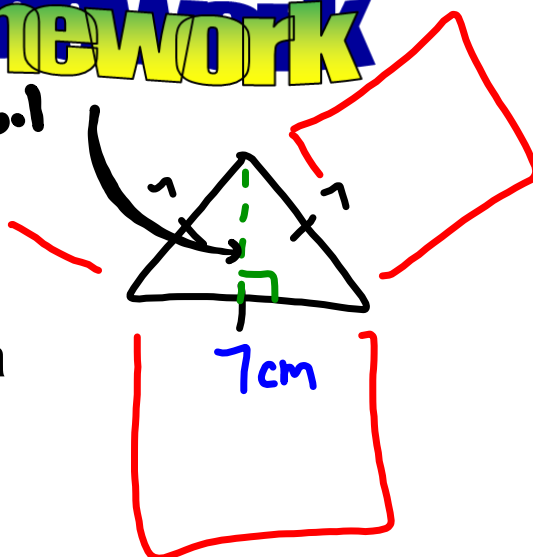
Class/Homework

Answers pg → 512

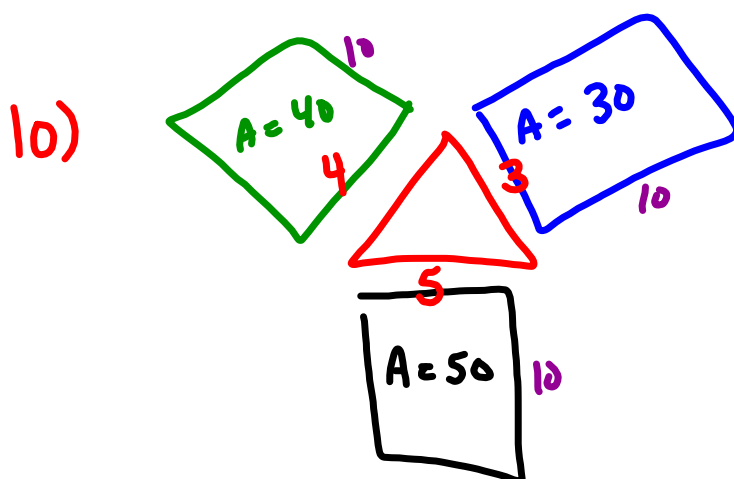
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#8(a,b,c,d), #9abc, #10a

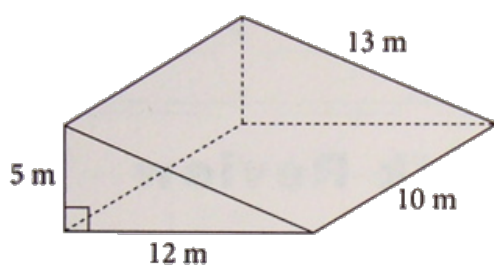
6.1



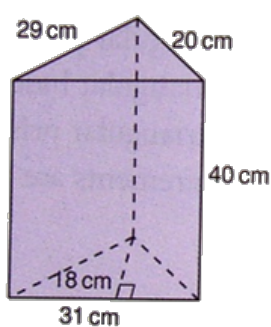
If need more #, 13, 14,



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