

Warm Up Grade 8

May __, 2017



Mental Math

1. $15 \times 7 \times 2 \times 3 =$
 $15 \times 2 = 30$
 $7 \times 3 = 21$ or $2 \times 30 = 60$
 $60 \times 3 = 180$
 $180 \times 7 = 1260$
 $= 1260$

2. $90 - 31 =$
 $90 - 30 = 60 - 1$
 59

3. 45% of $60 =$
 10% of $60 = 6$
 40% of $60 = 24$
 5% of $60 = 3$
 45% of $60 = 27$

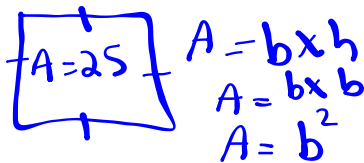
Assessment Review

- 4) The area of one face of a cube is 25 cm^2 .
 a) What is the surface area of the cube?
 b) What is the side length of the cube?

a) 6 equal faces on the cube

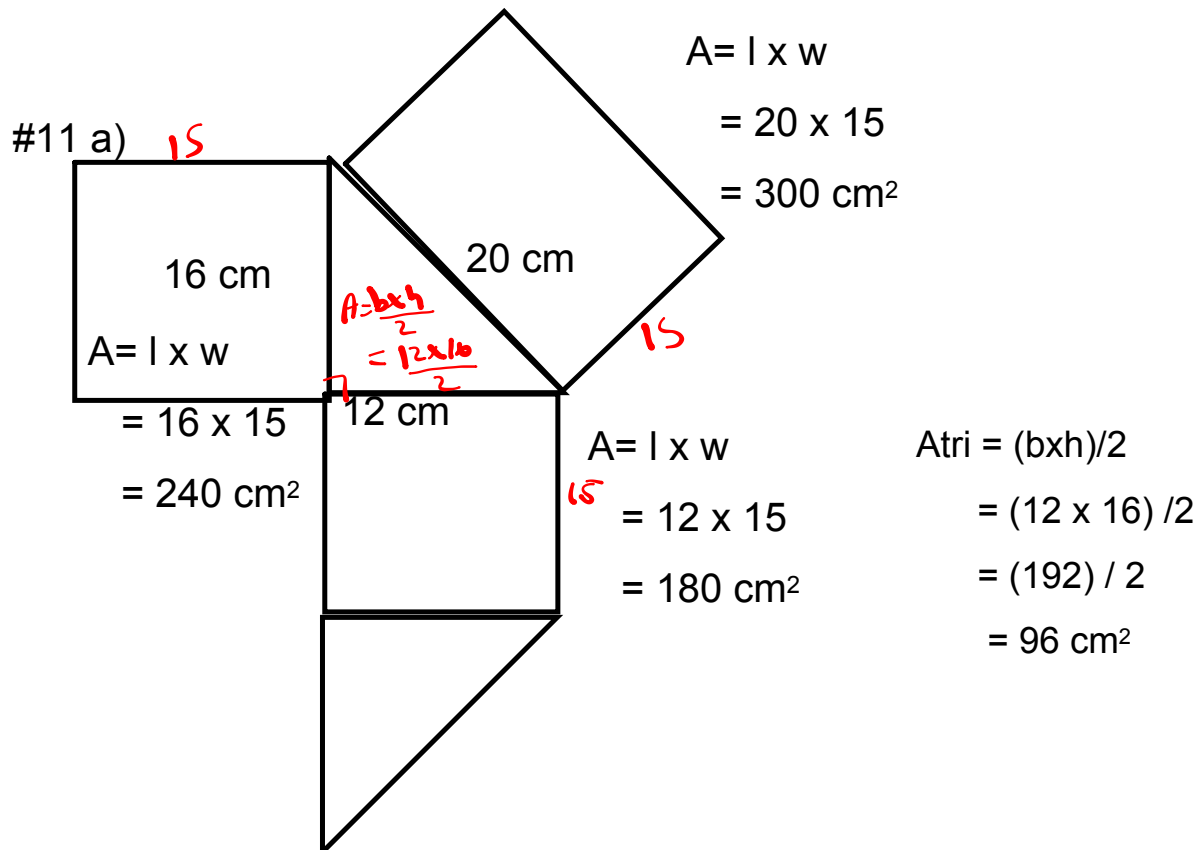
Total SA = 6 (Area of 1 face)
 $= 6 (25 \text{ cm}^2)$
 $= 150 \text{ cm}^2$

b)



Side of square = $\sqrt{\text{Area of Square}}$
 Side = $\sqrt{25 \text{ cm}^2}$
 $= 5 \text{ cm}$

Chapter 1
 (Now)



$$\begin{aligned}
 \text{Total SA} &= 2 \text{ Tri} + \text{rec} + \text{rec} + \text{rec} \\
 &= 2(96) + 180 + 240 + 300 \\
 &= 192 + 180 + 240 + 300 \\
 &= 912 \text{ cm}^2
 \end{aligned}$$

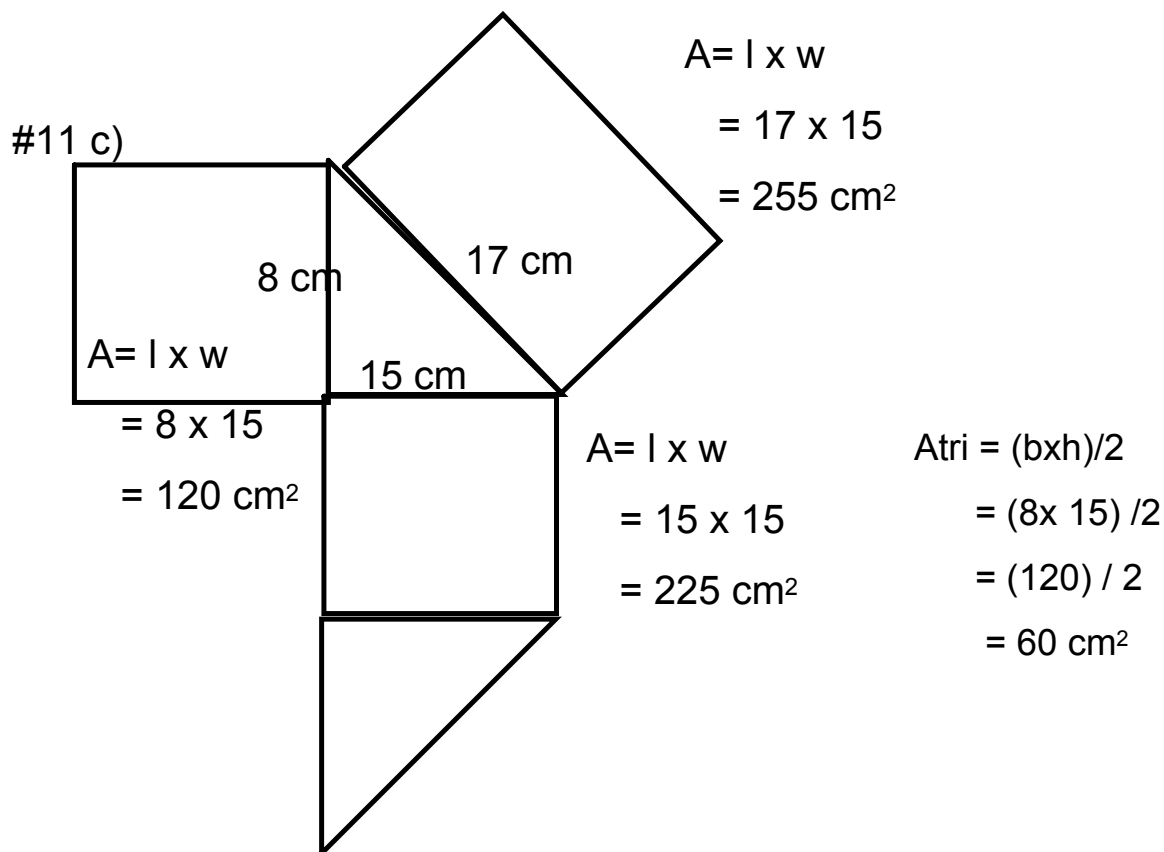
#11 b)

$A = l \times w$
 $= 18 \times 15$
 $= 270 \text{ cm}^2$

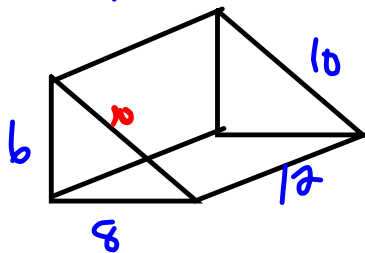
$A = l \times w$
 $= 15.6 \times 15.$
 $= 234 \text{ cm}^2$

$A_{\text{tri}} = (bxh)/2$
 $= (15.6 \times 15.6) / 2$
 $= (243.36) / 2$
 $= 121.68 \text{ cm}^2$

$$\begin{aligned}
 \text{Total SA} &= 2 \text{ Tri} + \text{rec} + \text{rec} + \text{rec} \\
 &= 2(121.36) + 270 + 270 + 234 \\
 &= 243.36 + 270 + 270 + 234 \\
 &= 1017.36 \text{ cm}^2
 \end{aligned}$$

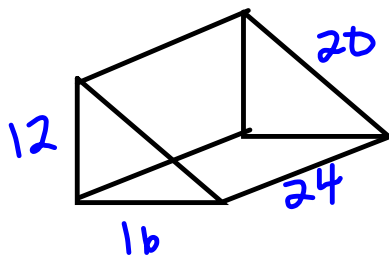


$$\begin{aligned}
 \text{Total SA} &= 2 \text{ Tri} + \text{rec} + \text{rec} + \text{rec} \\
 &= 2(60) + 120 + 255 + 225 \\
 &= 120 + 120 + 255 + 225 \\
 &= 720 \text{ cm}^2
 \end{aligned}$$

12. Using $9(a)$,

$$SA < 236.$$

Double each



$$\begin{aligned} A_b &= \frac{b \times h}{2} \\ &= \frac{12 \times 16}{2} \\ &= \frac{192}{2} \\ &= 96 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} &3 \text{ faces} \\ A &= 12 \times 24 \\ &= 288 \end{aligned}$$

$$\begin{aligned} A &= 16 \times 24 \\ &= 384 \end{aligned}$$

$$\begin{aligned} A &= 20 \times 24 \\ &= 480 \end{aligned}$$

$$\begin{aligned} SA &= 2 \times 96 + 288 + 384 + 480 \\ &= 192 + 288 + 384 + 480 \\ &= 1344 \end{aligned}$$

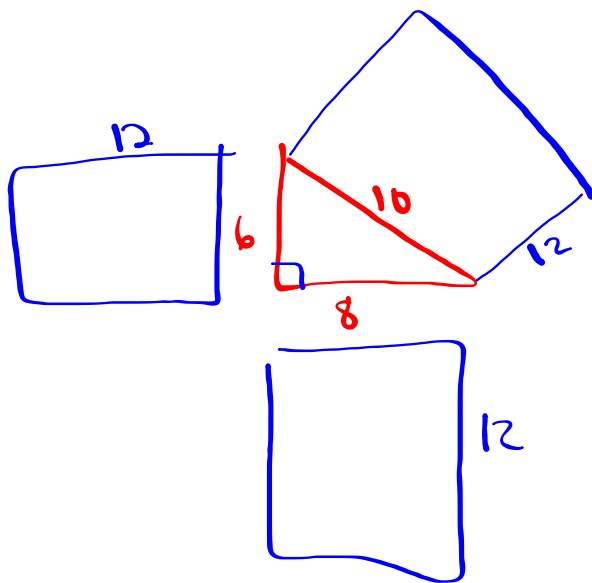
$236 \times 2 = 472$, which is much lower than 1344 cm^2

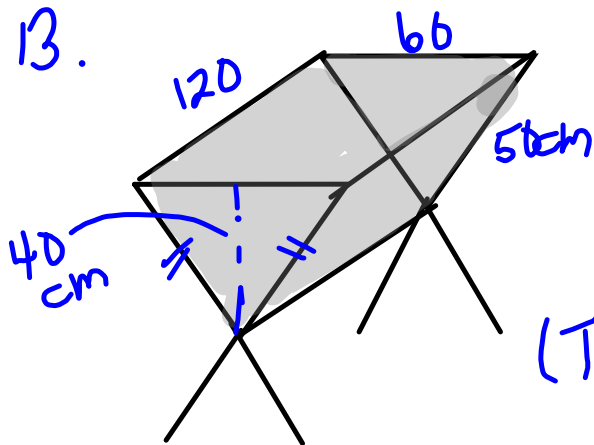
Really 4 times lower

$$A = l \times w$$

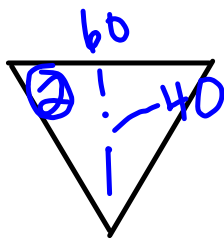
$$= 2l \times 2w$$

$$= 4 \times l \times w$$

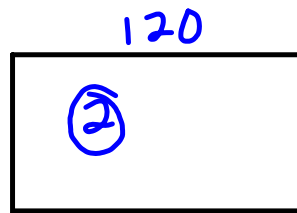




Water Trough
 → Faces
 2 triangles, 2 rectangle
 (There is no face on the top)

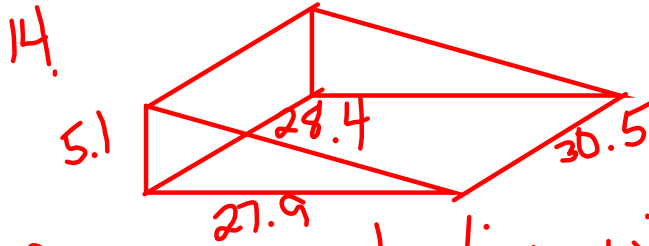


$$\begin{aligned}
 A &= \frac{b \times h}{2} \\
 &= \frac{60 \times 40}{2} \\
 &= \frac{2400}{2} \\
 &= 1200
 \end{aligned}$$

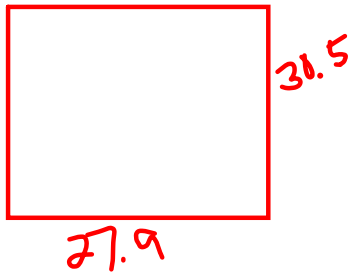


$$\begin{aligned}
 A &= l \times w \\
 &= 120 \times 50 \\
 &= 6000
 \end{aligned}$$

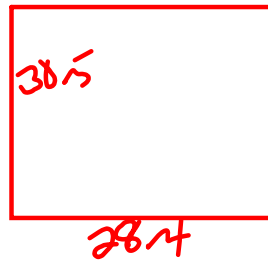
$$\begin{aligned}
 \text{Area of metal} &= 2 \times 1200 + 2 \times 6000 \\
 &= 2400 + 12000 \\
 &= 14400 \text{ cm}
 \end{aligned}$$



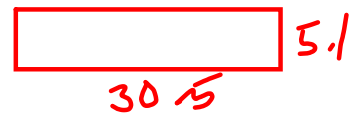
Binder, so plastic will only go on the rectangular faces.



$$\begin{aligned} A &= l \times w \\ &= 27.9 \times 30.5 \\ &= 850.95 \end{aligned}$$

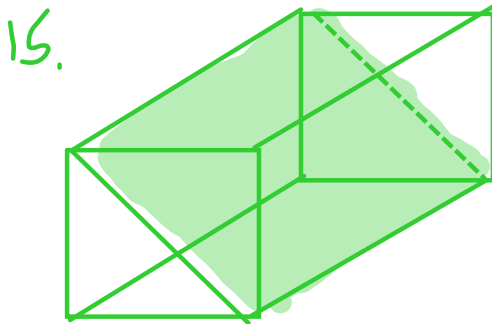


$$\begin{aligned} A &= l \times w \\ &= 28.4 \times 30.5 \\ &= 866.2 \end{aligned}$$

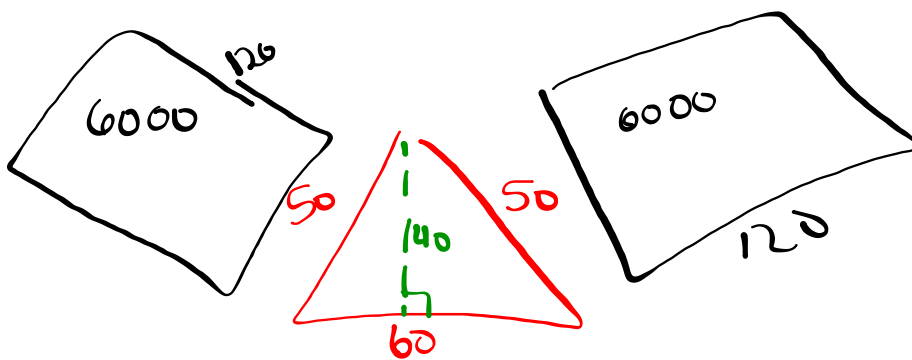


$$\begin{aligned} A &= l \times w \\ &= 30.5 \times 5.1 \\ &= 155.55 \end{aligned}$$

$$\begin{aligned} \text{Plastic} &= 850.95 + 866.2 + 155.55 \\ \text{Needed} &= 1872.7 \text{ cm}^2 \end{aligned}$$

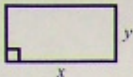


If you cut it in half the SA of the triangular prism will be more than half the SA of the rectangular prism because you have to include the slant face in the cut

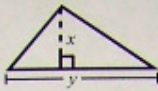


$$\begin{aligned} A_{\Delta} &= \frac{60 \times 40}{2} \\ &= \frac{2400}{2} \\ &= 1200 \end{aligned}$$

Mathematics Assessment at Grade 8 Formula Sheet

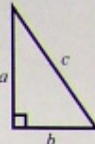


Area $A = xy$
Perimeter $P = 2x + 2y$

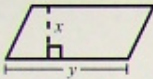


Area $A = \frac{1}{2}xy$ or $\frac{xy}{2}$


Pythagorean
Theorem



$c^2 = a^2 + b^2$

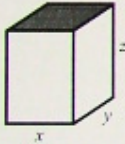


Area $A = xy$




Volume $V = x^3$
Surface Area $= 6x^2$

**For the provincial
assessment, it is acceptable
to round the value of
 π to 3.14.*



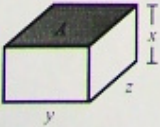
Volume $V = xyz$
Surface Area $= 2xy + 2xz + 2yz$

2(front) + 2(side) + 2(top)

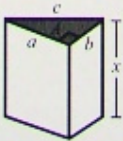


*Area $A = \pi r^2$
Circumference $C = \pi d$ or $C = 2\pi r$

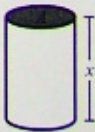
$1 \text{ cm}^3 = 1 \text{ mL}$



Volume $V = Ax$

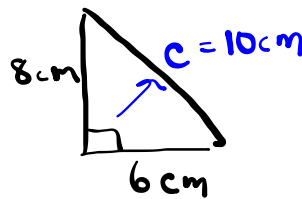
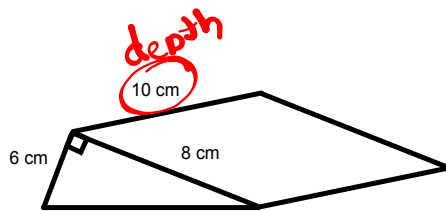


Volume $V = Ax$
Surface Area $= 2\left(\frac{1}{2}ab\right) + ax + bx + cx$



Volume $V = Ax$
Surface Area $= 2\pi r^2 + \pi dx$ or $2\pi r^2 + 2\pi rx$

Find the surface area of the wedge of cheese shown.



$$c^2 = a^2 + b^2$$

$$c^2 = (6\text{ cm})^2 + (8\text{ cm})^2$$

$$c^2 = 36\text{ cm}^2 + 64\text{ cm}^2$$

$$c^2 = 100\text{ cm}^2$$

$$\sqrt{c^2} = \sqrt{100\text{ cm}^2}$$

$$c = 10\text{ cm}$$

$$A = b \times h$$

$$= 8 \times 10$$

$$= 80\text{ cm}^2$$

$$A = b \times h$$

$$= 10 \times 10$$

$$= 100\text{ cm}^2$$

$$A = b \times h$$

$$= 6 \times 10$$

$$= 60\text{ cm}^2$$

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

$$= \frac{8\text{ cm} \times 6\text{ cm}}{2}$$

$$= \frac{48\text{ cm}^2}{2}$$

$$\text{Total SA} = 2\Delta + \square + \square + \square = 24\text{ cm}^2$$

$$= 2(24) + (80) + (100) + (60)$$

$$= 48\text{ cm}^2 + 80\text{ cm}^2 + 100\text{ cm}^2 + 60\text{ cm}^2$$

$$= 288\text{ cm}^2$$

Class/Homework

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#3 to #5,

Sheet #5



Quiz Friday(TOMORROW)

Attachments

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

Surface Area of Prisms WS Review PDF.pdf