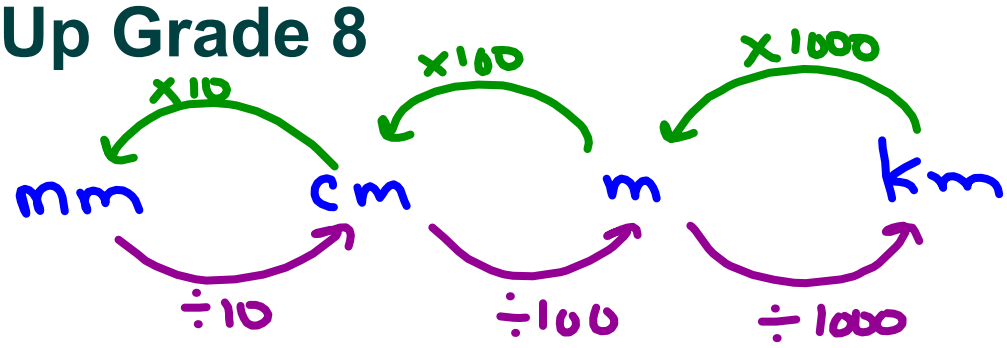
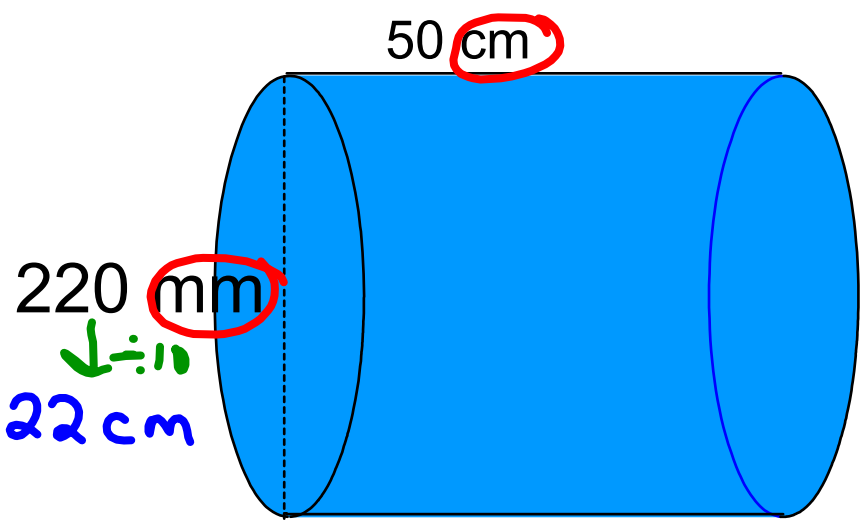
Warm Up Grade 8



Find the VOLUME and Surface Area

Units must be the same



Given

$d = 22\,cm \xrightarrow{\div 2} r = 11\,cm$

$H = 50\,cm$

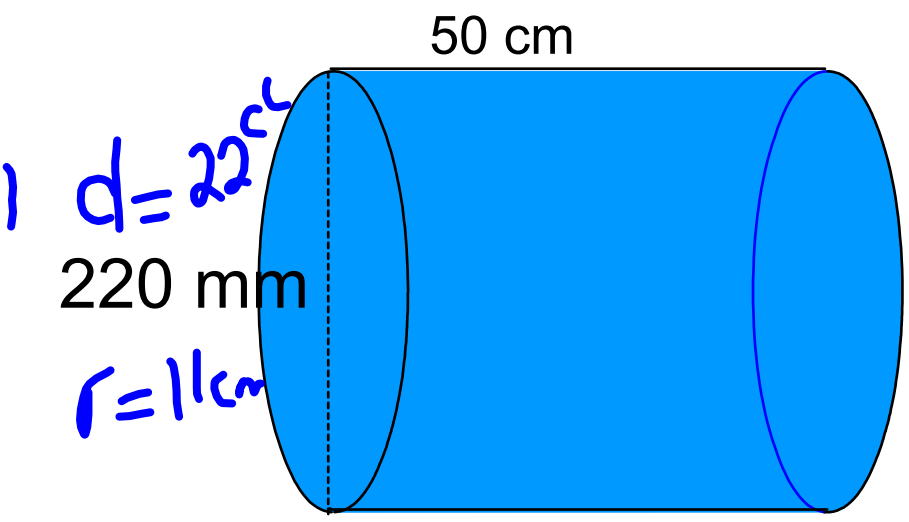
$$V_{cyl} = A_o \times H$$
$$= \pi r^2 \times H$$
$$= (3.14)(11cm)^2\,(50cm)$$
$$= (3.14)(121cm^2)(50cm)$$
$$= 18997\,cm^3$$

$$SA_{cyl} = 2\pi r^2 + 2\pi r H$$
$$2(3.14)(11cm)^2 + 2(3.14)(11cm)(50cm)$$
$$\underbrace{2(3.14)(121cm^2)}_{759.88\,cm^2} + \underbrace{2(3.14)(11cm)(50cm)}_{3454\,cm^2}$$
$$4213.88\,cm^2$$

Warm Up Grade 8

Date

Find the VOLUME and Surface Area



$r = 11\,cm$

SA cylinders

$A_o = \pi r^2$

$= \pi \times r \times r$

$= 3.14 \times 11cm \times 11cm$

$= 3.14 \times 121cm^2$

$= 379.94cm^2$

Step2

$A_{curved} = 2\pi r h$

$= 2 \times 3.14 \times 11cm \times 50cm$

$= 3454cm^2$

Step3

$SA = 2(A_o) + A_{curved}$

$= 2(379.94cm^2) + 3454cm^2$

$= 759.88cm^2 + 3454cm^2$

$= 4213.88cm^2$

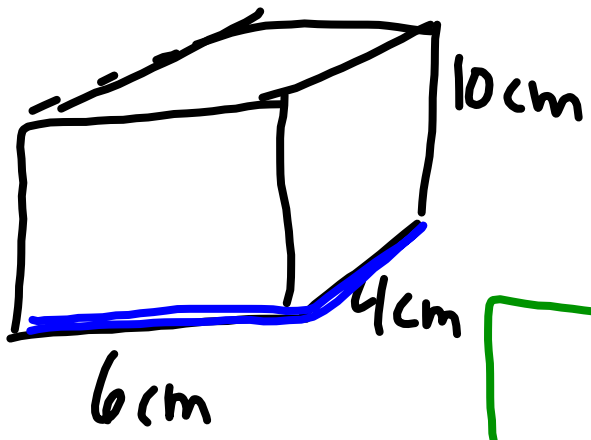
$V = A_{base} \times H_{prism}$

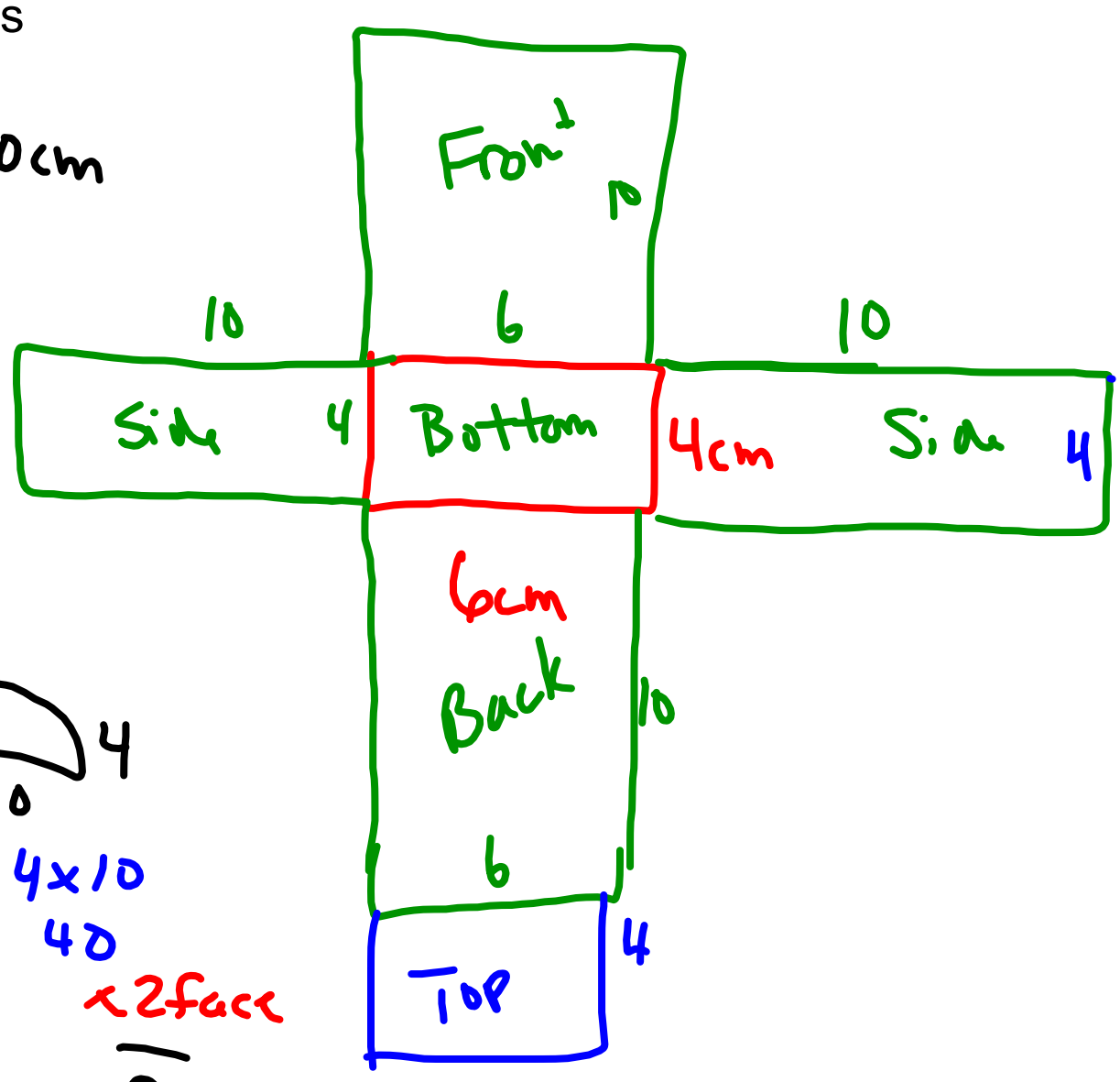
$= 379.94cm^2 \times 50cm$

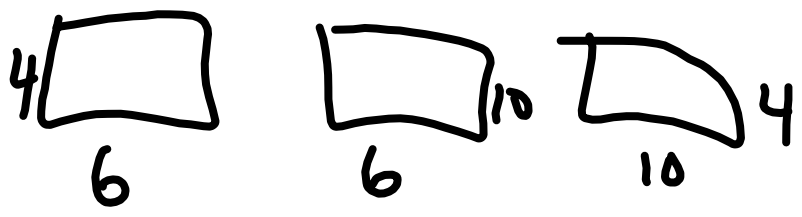
$18997\ cm^3$

Worksheet Solutions

1a)







$A = 6 \times 4 = 24$ (x2 face) $= 48$

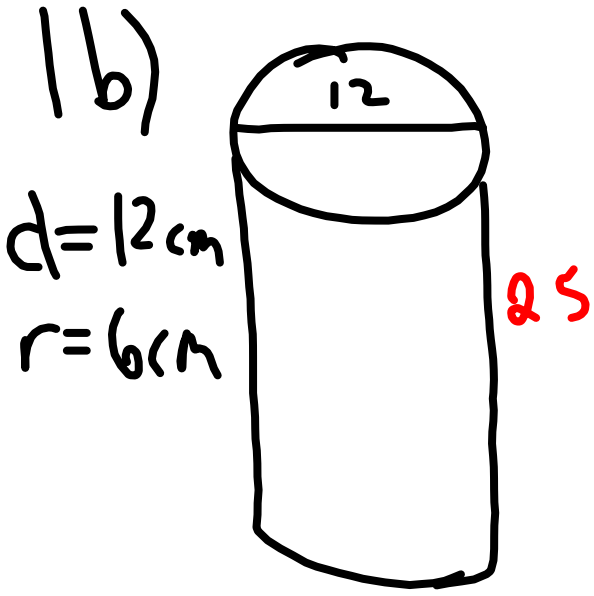
$6 \times 10 = 60$ (x2 face) $= 120$

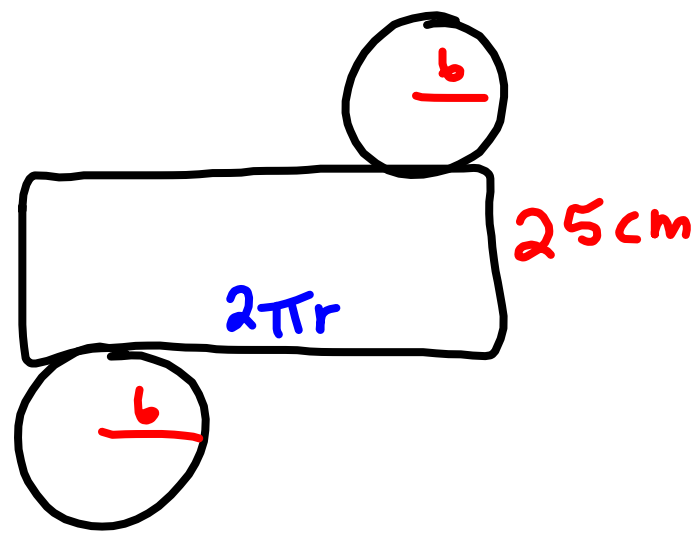
$4 \times 10 = 40$ (x2 face) $= 80$

$48 + 120 + 80$

$248\ cm^2$

1b)

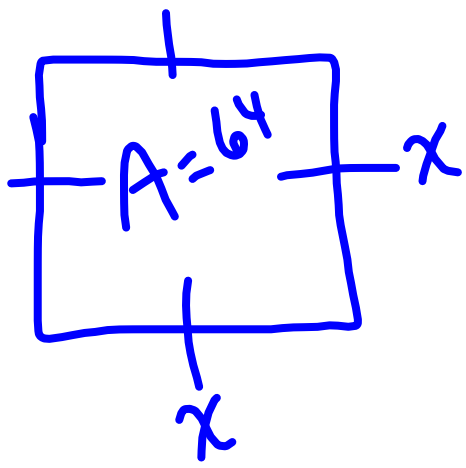




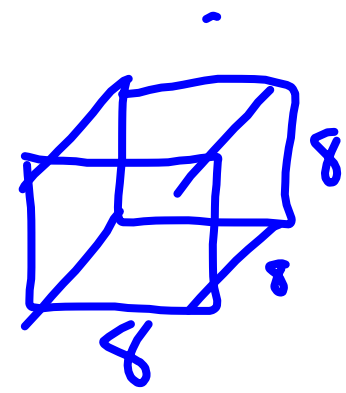
2) $SA_{cube} = 384\,cm^2$

6 face on a cube all equal

$$SA \text{ one face} = \frac{384\,cm^2}{6} = 64\,cm^2$$



$$\text{Side} = \sqrt{\text{Area}}$$
$$= \sqrt{64}$$
$$= 8$$



l, w, h are all the same

Dimensions $8 \times 8 \times 8$

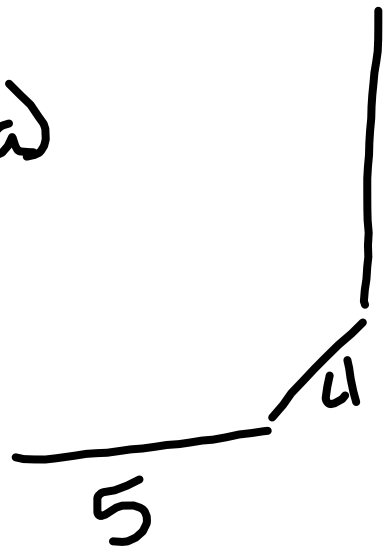
c) $V = A_{base} \times h$

$= (A_{Base}) \times H$

$= 64\,cm^2 \times 8$

$= 512\,cm^2$

3a)



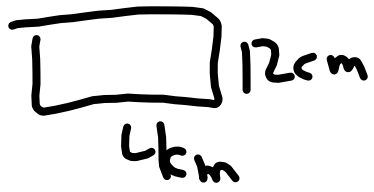
F

$A = l \times w$

$= 5cm \times 12cm$

$= 60cm^2$

S

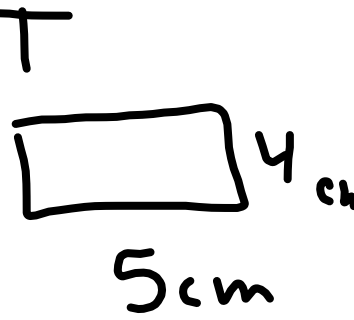


$A = l \times w$

$= 4cm \times 12cm$

$= 48cm^2$

T



$A = l \times w$

$= 5cm \times 4cm$

$= 20cm$

$SA = 2\,F + 2\,Side + 2\,Tops$

$= 2(60cm^2) + 2(48cm^2) + 2(20cm^2)$

$= 120cm^2 + 96cm^2 + 40$

$= 256\,cm^2$

$V = A_{base} \times H$

5×4

$= (20cm^2) \times 12$

$= 240\,cm^3$

4) $V = A_{base} \times H$

$336\ m^3 = (\underline{\quad 168 \quad}) \times \underline{\quad 2 \quad}$

$A_{base} = 168$

$= l \times w$

$= 84 \times 2$

$=$

$84 \times 2 \times 2$

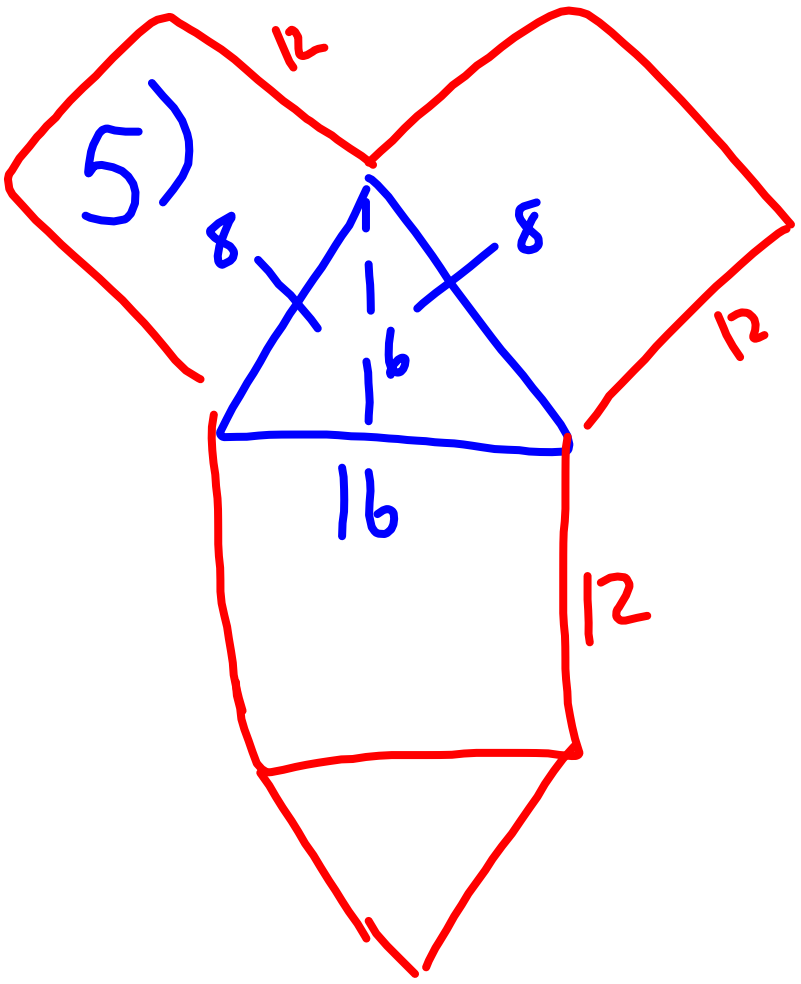
$4 \times 42 \times 2$

$8 \times 6 \times 7$

4×42

1×168

5)



SA =

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

$= \frac{16cm \times 6cm}{2}$

$= \frac{96}{2}$

$= 48cm^2$

$A_\square = 8 \times 12$

$= 96cm^2$

$A_\square = 96$

$A_\square = 16 \times 12$

$= 192cm$

$SA = 2\Delta + \square + \square + \square$

$= 2(48) + 96 + 96 + 192$

$96 + 96 + 96 + 192$

$480\ cm^2$

$V = A_{base} \times H$

$= 48cm^2 \times 12cm$

$= 576cm^3$

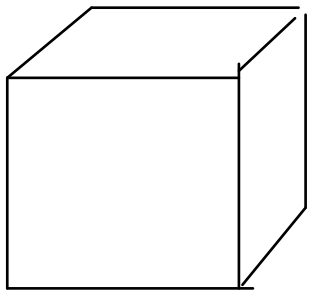
$SA = 816.4\ ft^2$

$V = 1648.5\ ft^3$

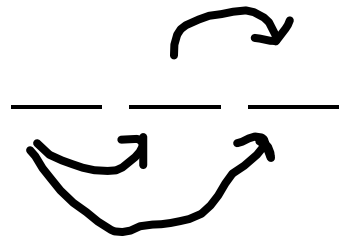
7) a) $SA = 1890 cm^2$

b) $1890\ cm^2 \div 500 cm^2 = 3.78$ cans

buy 4 cans



Surface Area of Rectangular Prism



front/back

top/bottom

__ cm

side/side

__cm

__ cm

A = l x w

= __ cm x __ cm

= __ cm^2

A = l x w

= __cm x __ cm

= __ cm^2

A = l x w

= __ cm x __ cm

= __ cm^2

Total SA = 2 (Top) + 2 (Side) + 2 (Front)

= 2 (__ cm^2) + 2 (__cm^2) + 2 (__ cm^2)

=

=

Surface Area of Rectangular Prism

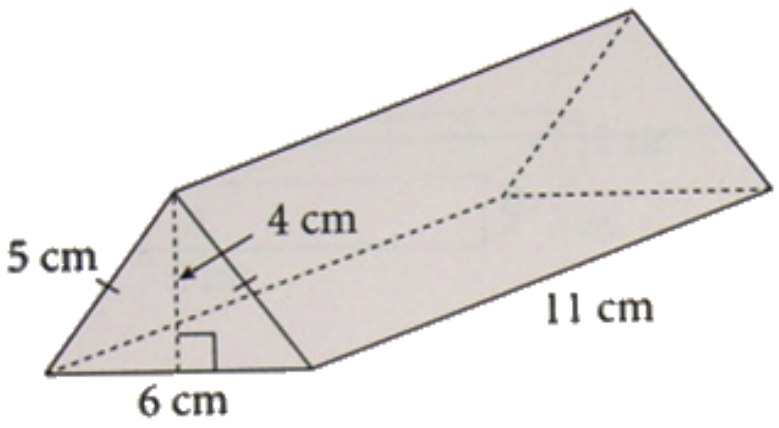
$V = A_{base\ top} \times H_{prism}$

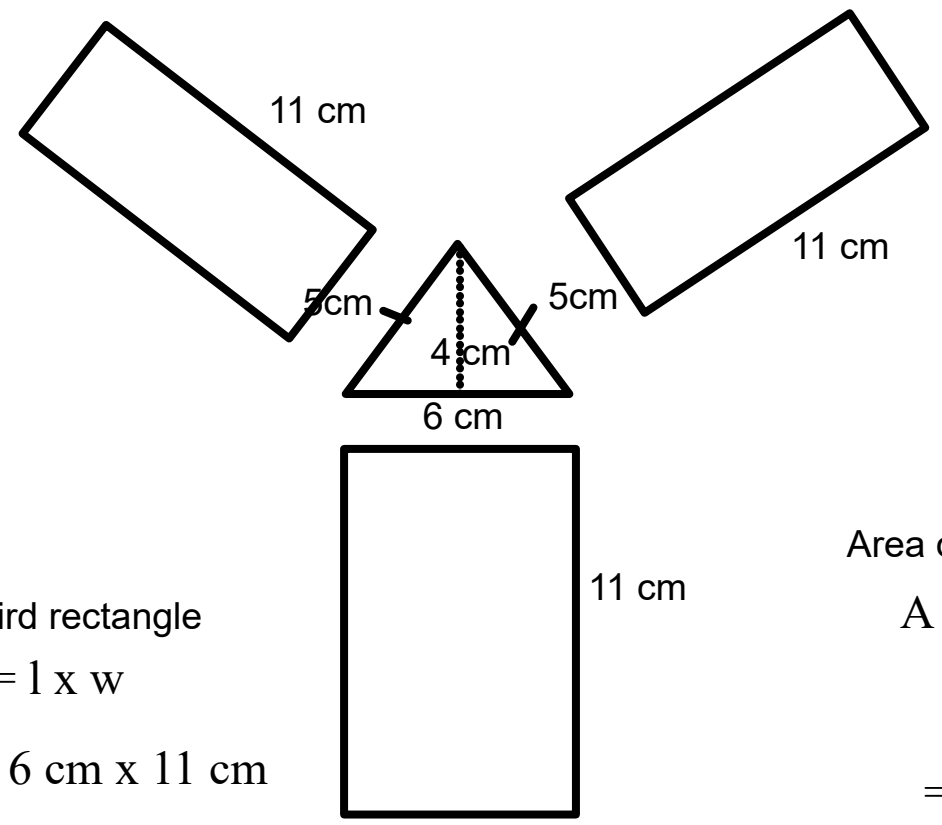
= __ cm^2 x __ cm

=___ cm^3

Surface Area of Triangular Prism

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

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

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

$= 200 \text{ cm}^2$

Volume Of Triangular Prism

Area of Triangle face

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

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

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

$$= 12 \text{ cm}^2$$

$V = A_{base} \times H_{prism}$

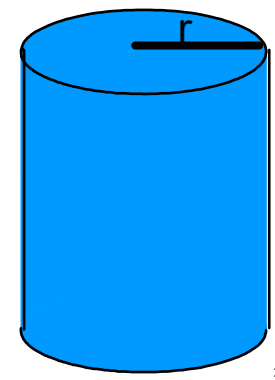
$= 12 \text{ cm}^2 \times 11 \text{ cm}$

$= 132 \text{ cm}^3$

Steps to Find Surface Area of Cylinders

Step 1) Area of circle = πr^2

= π x r x r



Step 2) Area of Curved Rectangle = b x h

= $(2\pi r)$ x h

= 2 x π x r x h

Step 2) Surface Area of Cylinder = 2(Area of Circle) + (Area of Curved Rectangle)

Volume of A Cylinder

Volume = Area of the base x H

= Area of a Circle x H

= π x r^2 x H

Page 224 #5, #6, #7, #8a(don't sketch just state the dimensions),

Class/Homework

Page 225 #14,15

PAge 226 #7 (But Find Volume & Surface Area)

Test Tomorrow

WS Test Review