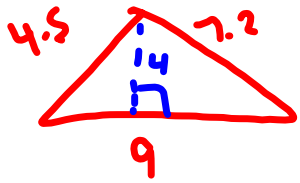
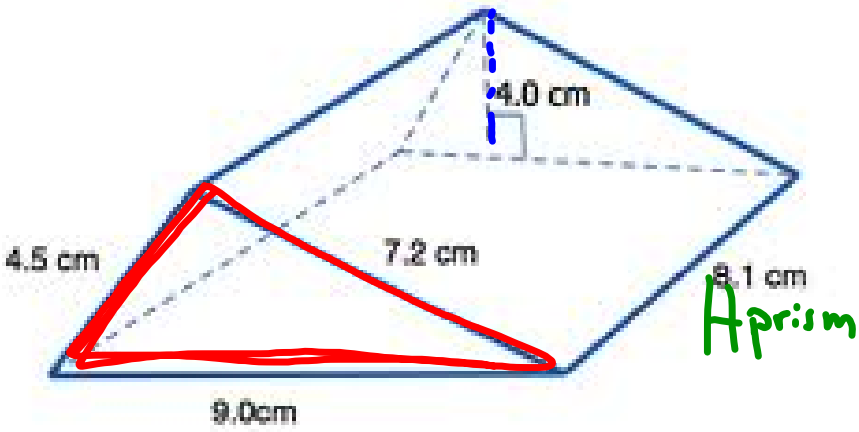
Warm Up Grade 8



Find the volume



A prism

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

$= \frac{9cm \times 4cm}{2}$

$= \frac{36cm^2}{2}$

$A_\Delta = 18cm^2$

Volume = $A_{base} \times H_{pris.}$

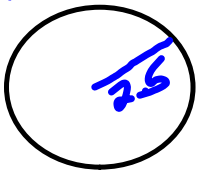
$= 18cm^2 \times 8.1cm$

$= 145.8\ cm^3$

pg 212

1. In Ex.2, the SA of label is 110 cm^2

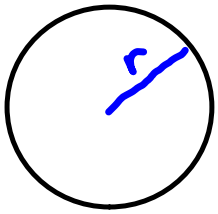
Area of Bottom



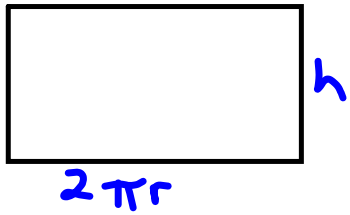
$A_{circle} = \pi r^2$
$= 3.14 \times 2.5^2$
$= 3.14 \times 6.25$
$= 19.625$

SA = Bottom + Label
$= 19.625 + 110$
$= 129.625 cm^2$

2. $SA = 2 \times A_{circle} + Area\ of\ Rect$
$= 2\pi r^2 + 2\pi r h$
Area Circumference

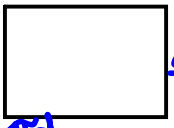


$A = \pi r^2$



3. The SA of a cylinder is always approx because of π. (We round to 3.14)

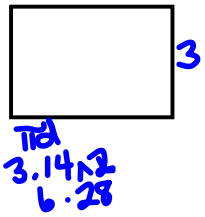
4. $A_0 = \pi r^2$
$= 3.14 \times 2^2$
$= 3.14 \times 4$
$= 12.56 cm^2$



$A = l \times w$
$= 12.56 \times 5$
$= 62.8 cm^2$

$SA = 2 \times 12.56 + 62.8$
$= 25.12 + 62.8$
$= 87.92 cm^2$

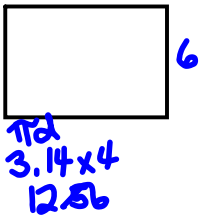
b) $A_0 = \pi r^2$
$= 3.14 \times 1^2$
$= 3.14 cm^2$



$A = l \times w$
$= 6.28 \times 3$
$= 18.84 cm^2$

$SA = 2 \times 3.14 + 18.84$
$= 6.28 + 18.84$
$= 25.12 cm^2$

c) $A_0 = \pi r^2$
$= 3.14 \times 2^2$
$= 3.14 \times 4$
$= 12.56 cm^2$



$A = l \times w$
$= 12.56 \times 6$
$= 75.36 cm^2$

$SA = 2 \times 12.56 + 75.36$
$= 25.12 + 75.36$
$= 100.48 cm$

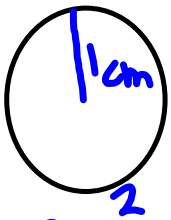
5. a) Cylinder Base with radius - 2cm
height - 5cm

b) Cylinder Base with radius - 1cm
height - 3cm

c) Cylinder Base with radius - 2cm
height - 6cm

b.

a)



$A = \pi r^2$
$= 3.14 \times 1^2$
$= 3.14\ cm^2$

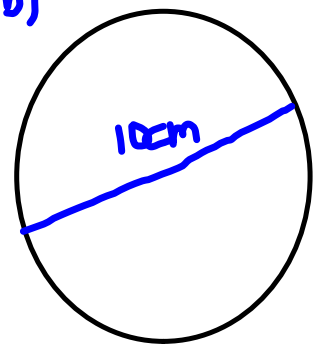
Curved Surface

3.14×2
6.28

$A = l \times w$
$= 6.28 \times 8$
$= 50.24\ cm^2$

Area of Curved Surface
$50.24\ cm^2$

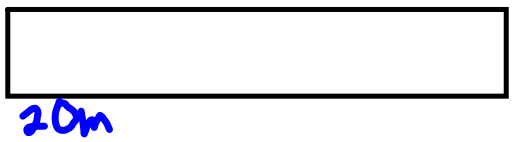
b)



3.14×10
$31.4\ cm$

Area of Curved $= l \times w$
$= 31.4 \times 3$
$= 94.2\ cm^2$

c)



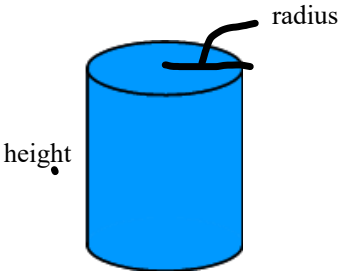
3.14×4
$12.5m$

Area of Curved $= l \times w$
$= 12.56 \times \frac{20}{2}$
$= 251.2\ m^2$

From last day

Surface Area of a Cylinder

When finding the surface area of a cylinder, you still have to find the area of the faces then add them. However, what are the shapes of the faces?



The top and bottom are both _____

If you unroll the curved face of the cylinder, you will get a _____

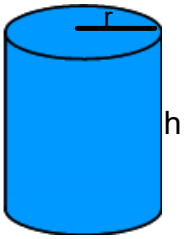
One side of the _____ is the _____ of the cylinder, and the other side of the _____ is the _____ of the circle

Step 1) Find the area of the circle
Step 2) Find the circumference of the circle
Step 3) Find the area of the rectangle A = bxh
= circumference x h
Step 4) Find the Total SA = 2Circles +Rectangle

Steps to Find Surface Area of Cylinders

Step 1) Area of circle = πr^2

$= \pi \times r \times r$



Step 2) Area of Curved Rectangle = b x h

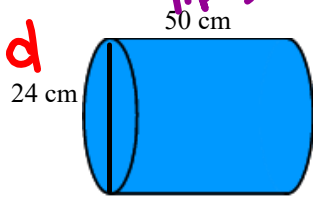
$= (2\pi r) \times h$

$= 2 \times \pi \times r \times h$

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

Find the surface area

Horizon



$d = 24cm$

$r = 12cm$

Your Turn

page 212
8, #9, #10, #11, #12, #15, #16

$$SA_{cyl} = 2\pi r^2 + 2\pi r H$$

$$2(3.14)(12cm)^2 + 2(3.14)(12cm)(50cm)$$

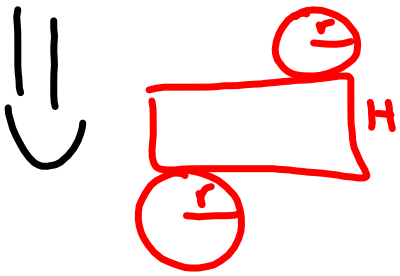
$$2(3.14)(144cm^2) + 2(3.14)(12cm)(50cm)$$

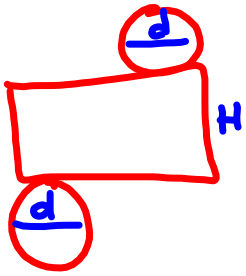
$$904.32cm^2 + 3768cm^2$$

$$4672.32\ cm^2$$

Class/Homework

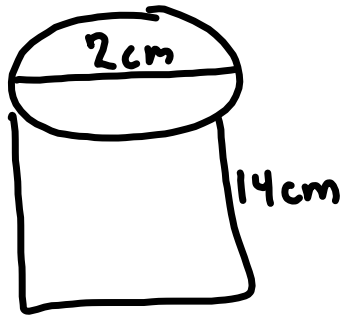
page 212
8, #9, #10, #11, #12, #15, #16





$SA_{cyl} = 2\pi r^2 + 2\pi r H$

$2(3.14)(\ )^2 + 2(3.14)(\ )(\ )$



$r = 1\,cm \xrightarrow{\div 100} 0.01\,m$

$H = 14\,cm \xrightarrow{\div 100} 0.14$

$$SA_{cy} = 2\pi r^2 + 2\pi r H$$

$$2(3.14)(1cm)^2 + 2(3.14)(1cm)(14cm)$$

$$6.28\,cm^2 + 87.92\,cm^2$$

$$94.2\,cm^2$$

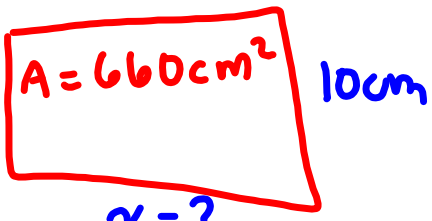
b) $1\,can \rightarrow 40\,m^2$ ↑ units

$94.2\,cm^2 \xrightarrow{\div 100} 0.942\,m^2$

$40\,m^2/_{can} \div 0.942\,m^2 = 43.2$ blocks

Can only paint 43 blocks.

16)  $A_{Rect} = 660\,cm^2$



Circumference
$2\pi r$

a) $x = \frac{660\,cm^2}{10\,cm}$

$= 66\,cm$

Circumference = 66cm

b) $2\pi r = 66$

$2(3.14)(r) = 66$

$6.28\,r = 66$

$\div 6.28 \quad \div 6.28$

$r = 10.50\,cm$

c) $A_o = \pi r^2$

$= 3.14\,(10.5cm)^2$

$= 3.14\,(110.25)$

$A_o = 346\,cm^2$

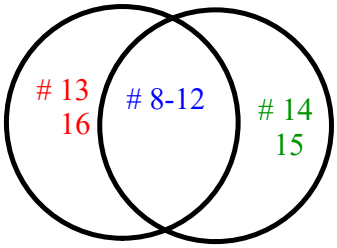
d) $SA = 2\pi r^2 + 2\pi r h$

$2(346) + 660\,cm^2$

$692\,cm^2 + 660\,cm^2$

$1352\,cm^2$

Homework
pg. 213



11. $1m = 100\ cm$

$1m^2 = 10\ 000\ cm^2$
(100×100)

$40m^2 = \underline{400\ 000}\ cm^2$