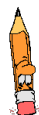


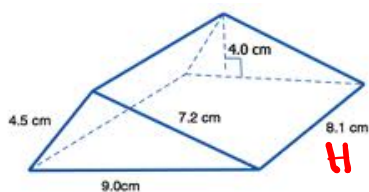


Warm Up Grade 8

May 31, 2017



Find the volume



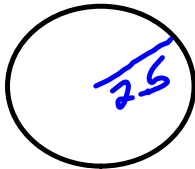
$$\begin{aligned} A_{\Delta} &= \frac{b \times h}{2} \\ &= \frac{4 \text{ cm} \times 9 \text{ cm}}{2} \\ &= \frac{36 \text{ cm}^2}{2} \\ &= 18 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} V &= A_{\text{base } \Delta} \times H \\ &= 18 \text{ cm}^2 \times 8.1 \text{ cm} \\ &= 145.8 \text{ cm}^3 \end{aligned}$$

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

Area of Bottom

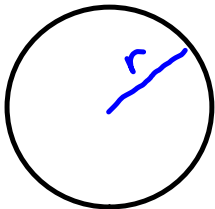


$$\begin{aligned}
 A_{\text{circle}} &= \pi r^2 \\
 &= 3.14 \times 2.5^2 \\
 &= 3.14 \times 6.25 \\
 &= 19.625
 \end{aligned}$$

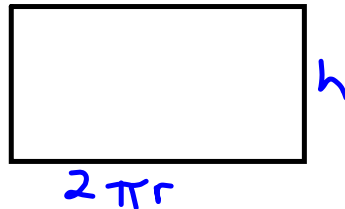
$$\begin{aligned}
 SA &= \text{Bottom} + \text{Label} \\
 &= 19.625 + 110 \\
 &= 129.625 \text{ cm}^2
 \end{aligned}$$

2. $SA = 2 \times A_{\text{circle}} + \text{Area of Rect}$

$$= 2 \underbrace{\pi r^2}_{\text{Area}} + \underbrace{2\pi r}_{\text{Circumference}} h$$

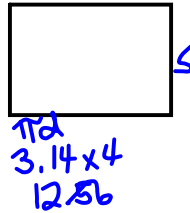


$$A_{\pi r^2}$$



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

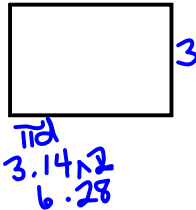
$$4. A_0 = \pi r^2 \\ = 3.14 \times 2^2 \\ = 3.14 \times 4 \\ = 12.56 \text{ cm}^2$$



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

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

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

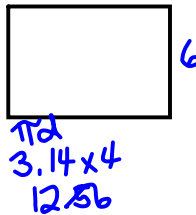


$$A = l \times w \\ = 6.28 \times 3 \\ = 18.84 \text{ cm}^2$$

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



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



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

$$SA = 2 \times 12.56 + 75.36 \\ = 25.12 + 75.36 \\ = 100.48 \text{ cm}^2$$

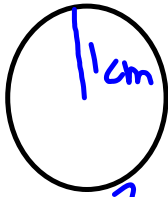
5. a) Cylinder Base with radius - 2cm
height - 5cm

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

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

b.

a)

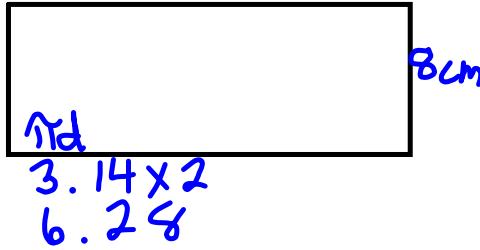


$$A = \pi r^2$$

$$= 3.14 \times 1^2$$

$$= 3.14 \text{ cm}^2$$

Curved Surface



$$A = l \times w$$

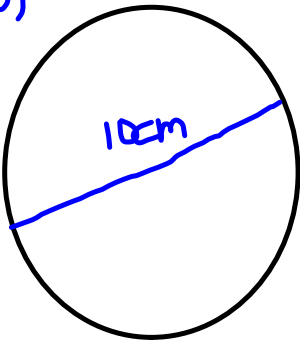
$$= 6.28 \times 8$$

$$= 50.24 \text{ cm}^2$$

Area of Curved Surface
50.24 cm²

Total 56.52

b)

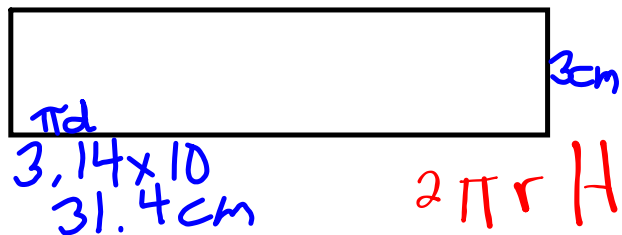


Area of Curved

$$= l \times w$$

$$= 31.4 \times 3$$

$$= 94.2 \text{ cm}^2$$



$$2\pi r H$$

c)

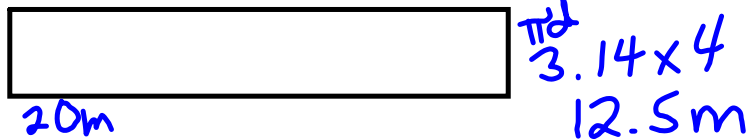


Area of Curved

$$= l \times w$$

$$= 12.56 \times 20$$

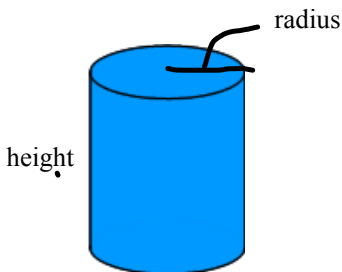
$$= 251.2 \text{ m}^2$$



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 $A = b \times h$

= circumference \times h

Step 4) Find the Total SA = 2Circles + Rectangle

$$2\pi r^2 + 2\pi r H$$

Steps to Find Surface Area of Cylinders

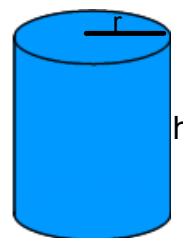
Step 1) Area of circle = πr^2

$$= \pi \times r \times r$$

Step 2) Area of Curved Rectangle = $b \times h$

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

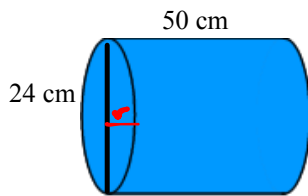
$$= 2 \times \pi \times r \times h$$



Step 2) Surface Area of Cylinder = $2(\text{Area of Circle}) + (\text{Area of Curved Rectangle})$

Find the surface area

Your Turn



$$d = 24 \text{ cm}$$

$$r = 12 \text{ cm}$$

$$H = 50 \text{ cm}$$

$$r = \frac{1}{2} d$$



Total SA = 2 Circles + Rect

$$= 2 \pi r^2 + 2 \pi r H$$

$$= 2 (3.14) (12 \text{ cm})^2 + 2 (3.14) (12 \text{ cm}) (50 \text{ cm})$$

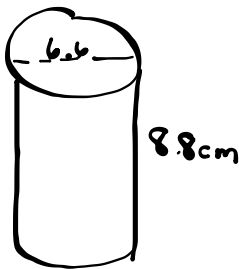
$$= 2 \times 3.14 \times 144 \text{ cm}^2 + 2 \times 3.14 \times 12 \text{ cm} \times 50 \text{ cm}$$

$$= 904.32 \text{ cm}^2 + 3768 \text{ cm}^2$$

$$= 4672.32 \text{ cm}^2$$

Class/Homework

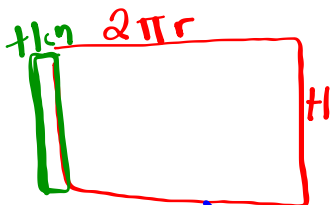
page 212
8, #9, #10, #11, #12, #15, #16
(a)



$$r = 3.3 \text{ cm}$$
$$H = 8.8 \text{ cm}$$

$$1 \text{ m}^2 = 10000 \text{ cm}^2$$

Label



$$\text{Circum} = 2(3.14)(3.3)$$
$$= 20.72$$
$$+ 1 \text{ cm overlap}$$
$$= 21.72 \text{ cm}$$

$$21.72 \text{ cm}$$
$$A = 21.72 \times 8.8$$
$$= 191.1712 \text{ cm}^2$$
$$8.8$$

1b) $A = 660 \text{ cm}^2$

a) Curved part \Rightarrow $2\pi r H$
 Rectangle
 Circumference \times ht
 $660 \text{ cm}^2 = \text{Circum} \times 10 \text{ cm}$

$$\frac{660 \text{ cm}^2}{10 \text{ cm}} = \frac{\text{Circum} \times 10 \text{ cm}}{10 \text{ cm}}$$

$66 \text{ cm} = \text{Circum}$

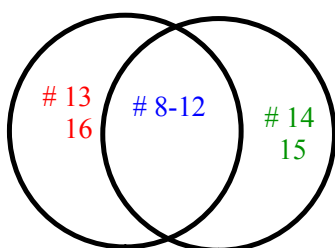
b) Circumference $= 2\pi r$
 $66 \text{ cm} = 2\pi r$
 $= 2(3.14) r$
 $66 \text{ cm} = 6.28 r$

$$\frac{66 \text{ cm}}{6.28} = \frac{6.28 r}{6.28}$$

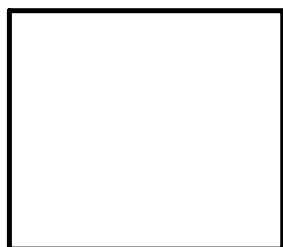
$10.5 \text{ cm} = r$

c) $A_0 = \pi r^2$
 $= 3.14 (10.5)^2$
 $= 3.14 \times 110.25 \text{ cm}^2$
 $= 346.186 \text{ cm}^2$

Homework
pg. 213



11. $1\text{m} = 100\text{cm}$



1m
100cm

$$1\text{m}^2 = 10\,000\text{cm}^2$$

(100 × 100)

1m
100cm

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