

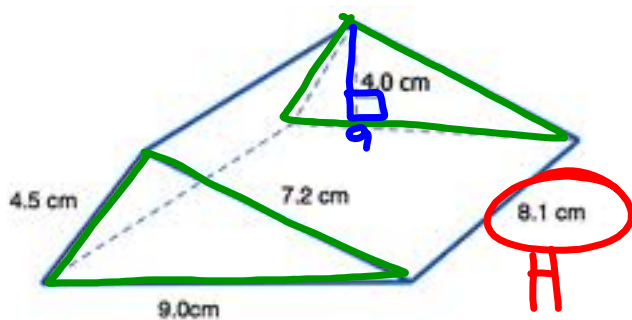


Warm Up Grade 8



Find the volume

$$V = A_{\text{base}\Delta} \times H$$



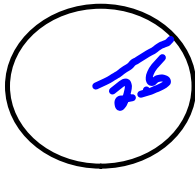
$$\begin{aligned} A_{\Delta} &= \frac{b \times h}{2} \\ &= \frac{9 \times 4}{2} \\ &= \frac{36}{2} \\ &= 18 \text{ cm}^2 \end{aligned}$$

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

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

Area of Bottom

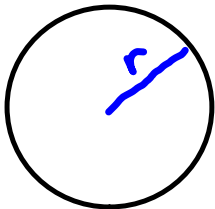


$$\begin{aligned}
 A_{\text{bottom}} &= \pi r^2 \\
 &= 3.14 \times 2.5^2 \\
 &= 3.14 \times 6.25 \\
 &= 19.625
 \end{aligned}$$

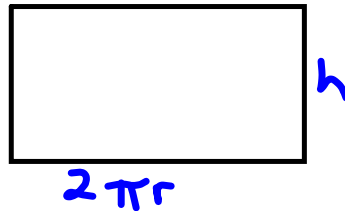
$$\begin{aligned}
 SA &= \text{Bottom} + \text{Label} \\
 &= 19.625 + 110 \\
 &= 129.625 \text{ cm}^2
 \end{aligned}$$

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

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

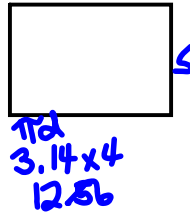


$$A \pi r^2$$



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

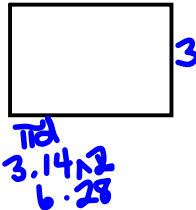
$$4. A_0 = \pi r^2 \\ = 3.14 \times 2^2 \\ = 3.14 \times 4 \\ = 12.56 \text{ cm}^2$$



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

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

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

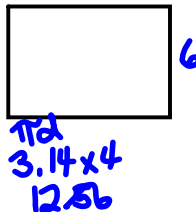


$$A = l \times w \\ = 6.28 \times 3 \\ = 18.84 \text{ cm}^2$$

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



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



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

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

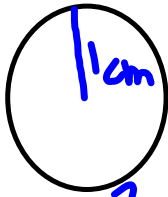
5. a) Cylinder Base with radius - 2cm
height - 5cm

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

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

b.

a)

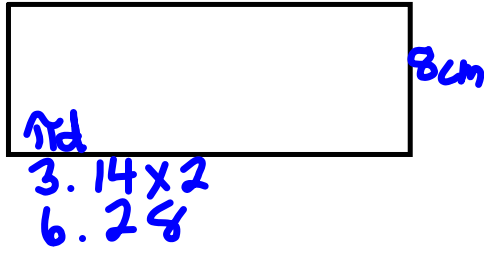


$$A = \pi r^2$$

$$= 3.14 \times 1^2$$

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

Curved Surface



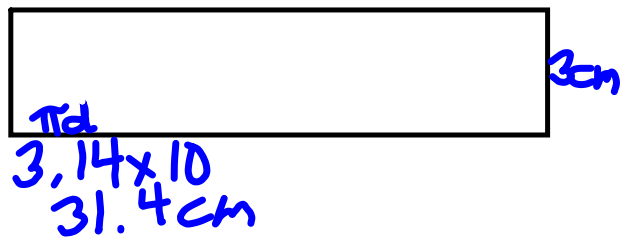
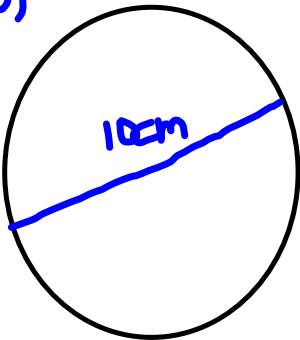
$$A = l \times w$$

$$= 6.28 \times 8$$

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

Area of Curved Surface
50.24 cm²

b)



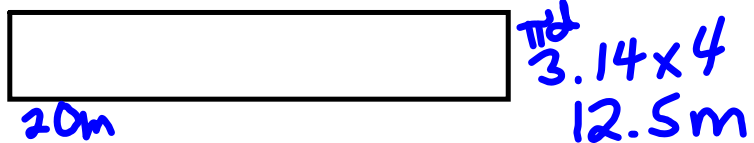
Area of Curved

$$= l \times w$$

$$= 31.4 \times 3$$

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

c)



Area of Curved

$$= l \times w$$

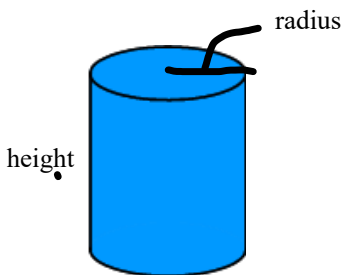
$$= 12.56 \times 20$$

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

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 $A = b \times h$

$\text{Circumference} \times h$

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

Steps to Find Surface Area of Cylinders

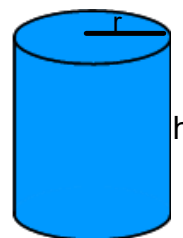
Step 1) Area of circle = πr^2

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

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

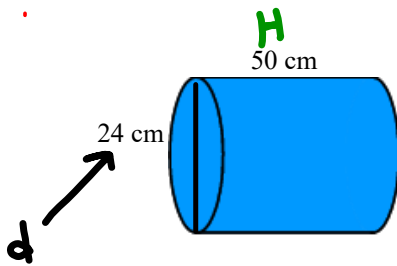
$$= (2\pi r) \times h$$

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



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

Find the surface area



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

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

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

Your Turn

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

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

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

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

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

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

Class/Homework

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

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

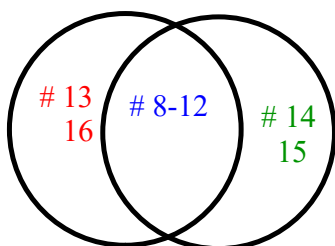


$$2 \times 3.14 \times ()^2 + 2 \times 3.14 \times () \times ()$$

do first
r x r

$$\begin{array}{r} 2 \times 3.14 \times \underline{\quad} + 2 \times 3.14 \times () \times () \\ \underline{\quad} + \underline{\quad} \\ \underline{\quad} \end{array}$$

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



1m
 100cm

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

(100×100)

1m
 100cm

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