



Cylinders

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Cylinders are 3D shapes that are bounded by two circles.

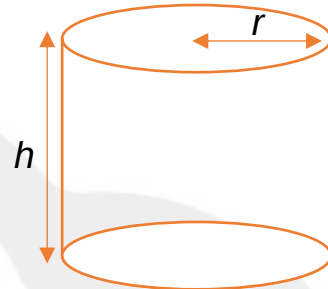
The surface area of a cylinder is the area of two circles plus the area of a rectangle.

The SA formula for cylinders is:

$$A = 2\pi rh + 2\pi r^2$$

The **volume** of a cylinder is the area of its base (circle) by its height. The formula is:

$$V = \pi r^2 h$$



Instructions: Find the surface area and volume for the cylinders below.

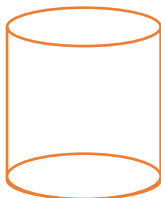
1

$$r = 3.3\text{cm}$$
$$h = 7.2\text{cm}$$



2

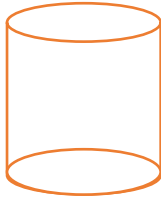
$$r = 4.8\text{m}$$
$$h = 9.3\text{m}$$





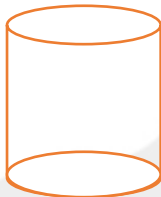
3

$$r = 7.2\text{mm}$$
$$h = 8.2\text{mm}$$



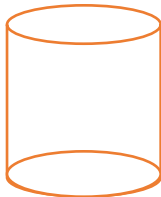
4

$$r = 3.4\text{cm}$$
$$h = 5.9\text{cm}$$



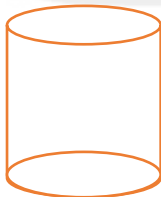
5

$$r = 12.3\text{km}$$
$$h = 7.6\text{cm}$$



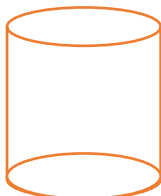
6

$$r = 5.3\text{cm}$$
$$h = 1.7\text{cm}$$



7

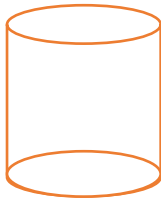
$$r = 17.5\text{m}$$
$$h = 6.1\text{m}$$





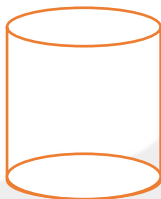
8

$$r = 13.0\text{cm}$$
$$h = 5.3\text{cm}$$



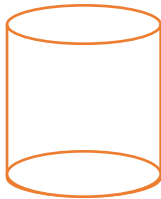
9

$$r = 9.7\text{mm}$$
$$h = 9.2\text{mm}$$



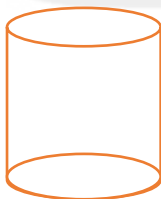
10

$$r = 7.3\text{km}$$
$$h = 3.9\text{km}$$



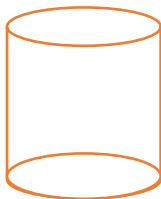
11

$$r = 8.9\text{m}$$
$$h = 19.4\text{m}$$



12

$$r = 15.5\text{m}$$
$$h = 17.9\text{m}$$





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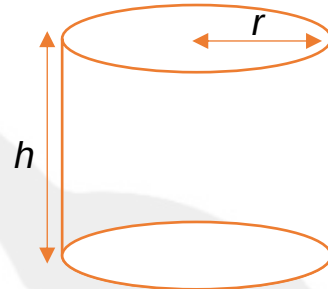
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$$A = 2\pi rh + 2\pi r^2$$

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Instructions: Find the surface area and volume for the cylinders below.

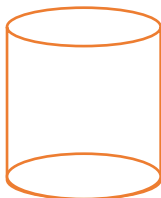
1

$r = 8.7\text{cm}$
 $h = 5.3\text{cm}$



2

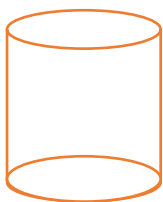
$r = 7.5\text{mm}$
 $h = 6.9\text{mm}$





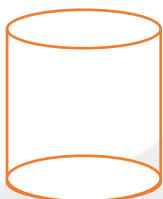
3

$$r = 6.3\text{km}$$
$$h = 4.8\text{km}$$



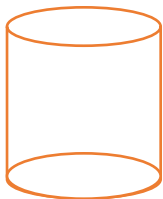
4

$$r = 11.4\text{m}$$
$$h = 9.9\text{m}$$



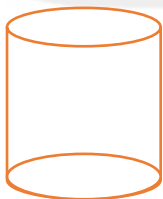
5

$$r = 2.9\text{cm}$$
$$h = 4.7\text{cm}$$



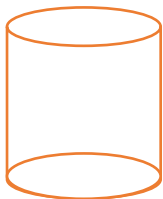
6

$$r = 10.1\text{m}$$
$$h = 14.3\text{m}$$



7

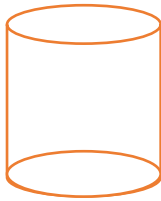
$$r = 18.0\text{mm}$$
$$h = 5.6\text{mm}$$





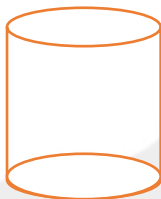
8

$$r = 9.5\text{cm}$$
$$h = 8.7\text{cm}$$



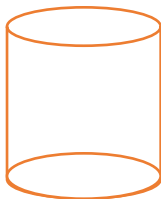
9

$$r = 14.9\text{m}$$
$$h = 16.6\text{m}$$



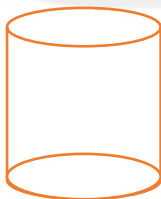
10

$$r = 22.2\text{km}$$
$$h = 5.8\text{km}$$



11

$$r = 13.3\text{m}$$
$$h = 27.5\text{m}$$



12

$$r = 30.4\text{m}$$
$$h = 18.6\text{m}$$

