Geometry

12.2 Surface Area of Prisms and Cylinders

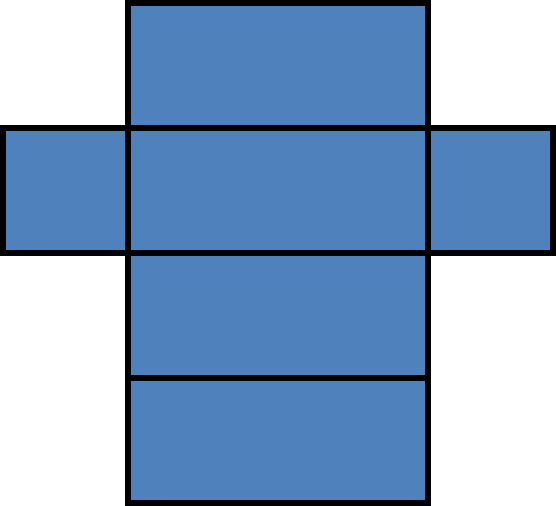
# Surface Area

* Surface area = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

sum of the areas of each surface of the solid

* + In order to calculate surface area it is sometimes easier to\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

draw all the surfaces

Nets

* Imagine cutting the three dimensional figure along\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

the edges and folding it out

* Start by drawing one surface, then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

add up the area of each of the surfaces

visualize unfolding the solid

* To find the surface area, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of the net.

# Parts of a Right Prism

(the ends)

* Bases 🡪 parallel congruent surfaces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

parallelograms

base

Lateral Face

Lateral Edge

* Lateral faces 🡪 the other faces (they are\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
* Lateral edges 🡪 intersections of the lateral faces (they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_)

perpendicular

parallel

* Altitude 🡪 segment \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the planes containing the two bases with an endpoint on each plane

length of the altitude s

* Height 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Right prism

altitudes

Right

* Prism where the lateral edges are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Oblique prism

Not a right prism

Oblique

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Surface Area

Lateral Area (L) of Prisms

Lateral Surfaces

* Area of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ph

* \_\_\_\_\_\_\_\_\_\_\_

Lateral Area

* + L = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of base

* + P = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height

* + h = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Base Area (B)

* In a prism, both bases are congruent, so you only need to find the area of one base and multiply by two

## Surface Area of a Right Prism

S = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Where S = surface area, B = base area, P = perimeter of base, h = height of prism

Draw a net for a triangular prism.

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Find the lateral area and surface area of a right rectangular prism with height 7 inches, length 3 inches, and width 4 inches.

# Surface Area of Cylinders

circles

* Cylinders are the same as prisms except the bases are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2πrh

* + Lateral Area = L = \_\_\_\_\_\_\_\_\_\_\_\_\_

## Surface Area of a Right Cylinder

Where S = surface area, r = radius of base, h = height of prism

The surface area of a right cylinder is 100 cm2. If the height is 5 cm, find the radius of the base.

Only 2.2 makes sense because the radius must be positive

Draw a net for the cylinder and find its surface area.

5

2

Assignment: 806 #2-28 even, 31-37 all = 21