## Surface Area of Prisms \& Cylinders



## Surface Area of Prisms



Rectangular Prism


Triangular Prism

## Surface Area (S) of a Prism

## Lateral S Formula:

$\boldsymbol{S}=\boldsymbol{P h}$

S=Surface Area
P= Perimeter of Base
h= Height of Figure

## Total S Formula:

## $S=P h+2 B$

S=Surface Area
$P=$ Perimeter of Base
h= Height of Figure
$B=$ Area of the Base

## Surface Area (S) of a Prism

## Lateral S Formula:

$\boldsymbol{S}=\boldsymbol{P h}$
$S=28(17)$
$S=476 \mathrm{~cm}^{2}$


Total S Formula:

$$
P=4+4+10+10
$$

$$
P=28 \mathrm{~cm}
$$

$\boldsymbol{S}=\boldsymbol{P h}+2 \boldsymbol{B}$
$h=17 \mathrm{~cm}$
$S=28(17)+2(40)$
$S=556 \mathrm{~cm}^{2}$


## Surface Area (S) of a Prism

Lateral S Formula:
$S=P h$
$S=18(12)$
$S=216 \mathrm{~cm}^{2}$
Total S Formula:

$$
\begin{aligned}
& S=P h+2 B \\
& S=18(12)+2(12) \\
& S=240 \mathrm{~cm}^{2}
\end{aligned}
$$



## Surface Area (S) of a Prism

Lateral S Formula:
$\boldsymbol{S}=\boldsymbol{P h}$


Total S Formula: $S=P h+2 B$

Identify the base.

$$
\begin{aligned}
& P= \\
& B=A=b h \\
& h=
\end{aligned}
$$

## Surface Area (S) of a Prism

Lateral S Formula:

$$
S=P h
$$

$S=(5+5+4+4) 7$
$S=126$ units $^{2}$


Total S Formula:
$S=P h+2 \mathrm{~B}$
$S=(5+5+4+4) 7+2(4 \cdot 5)$
$S=166$ units $^{2}$

## Surface Area (S) of a Prism

Lateral S Formula:
$\boldsymbol{S}=\boldsymbol{P h}$

Total S Formula: $S=P h+2 B$


Identify the base.

$$
\begin{aligned}
& P= \\
& B=A=\frac{1}{2} b h \\
& h=
\end{aligned}
$$

## Surface Area (S) of a Prism

Lateral S Formula:

$$
S=P h
$$

$$
S=(8+8+8) 12
$$

$$
S=288 \mathrm{~cm}^{2}
$$

Total S Formula:


$$
S=P h+2 \mathrm{~B}
$$

$S=(8+8+8) 12+2\left(\frac{1}{2} \cdot 8 \cdot 3\right)$

$$
S=312 \mathrm{~cm}^{2}
$$

## Surface Area (S) of a Cylinder



## Parts of a cylinder

A cylinder has 2 main parts: *A rectangle
*A circle - actually 2
Together they make a cylinder.

## Surface Area (S) of a Cylinder

Lateral S Formula:
$S=2 \pi r h$
$S=2(3.14)(5)(10)$
$S=314 \mathrm{~cm}^{2}$

Total S Formula:
$S=2 \pi r h+2 \pi r^{2}$
$S=2(3.14)(5)(10)+2(3.14)(5)^{2}$
$S=471 \mathrm{~cm}^{2}$


$$
r=5 \mathrm{~cm}
$$

$$
h=10 \mathrm{~cm}
$$

$$
\pi=3.14
$$

## Surface Area (S) of a Cylinder

Lateral S Formula:

$$
S=2 \pi r h
$$



## Total S Formula:

$S=2 \pi r h+2 \pi r^{2}$

$$
\begin{aligned}
& \pi= \\
& r= \\
& h=
\end{aligned}
$$

## Surface Area (S) of a Cylinder

## Lateral S Formula:

$S=2 \pi r h$
$S=2(3.14)(3.5)(11.5)$
$S=252.77 \mathrm{~cm}^{2}$


Total S Formula:
$S=2 \pi r h+2 \pi r^{2}$
$S=2(3.14)(3.5)(11.5)+2(3.14)(3.5)^{2}$
$S=329.7 \mathrm{~cm}^{2}$

