Geometry

## Area:

Triangle:

$$
\mathrm{A}=\frac{1}{2}(\mathrm{~b} . \mathrm{h})
$$

$b$ is the base (AC) and $h$ is the height of the triangle

$$
\text { Parallelogram: } \quad \mathrm{A}=\mathrm{b} . \mathrm{h}
$$

$b$ is the base and $h$ is the height of the parallelogram

Trapezoid:

$$
\mathrm{A}=\frac{1}{2}(\mathrm{a}+\mathrm{b}) h
$$

$a$ and $b$ are the parallel and $h$ is the height of the trapezoid

Circle:

$$
\mathrm{A}=\pi \mathrm{r}^{2}
$$

$r$ is the radius.

## Perimeter:

The sum of all sides ( $a, b, c, \ldots$. ) of polygon:

$$
P=a+b+C+\ldots
$$

Circumference of a circle: $\quad \mathrm{C}=2 \pi \mathrm{r}$


Scalen

Right


Volume and Surface Area

In all these cases $B$ is the base area and $H$ is the height of the shape.

| Volume | Surface area | Shape |
| :---: | :---: | :---: |
| Rectangular Cube: $\mathrm{V}=\mathrm{B} \cdot \mathrm{H}=\mathrm{l} . \mathrm{w} \cdot \mathrm{~h}$ | $2 l h+2 l w+2 h w$ |  |
| Prisms: $V=B . H$ | The sum of all rectangular sides areas + 2B |  |
| Cylinder: $\mathrm{V}=\pi \mathrm{r}^{2} \mathrm{H}$ | $2 \pi r H+2 \pi r^{2}$ |  |
| Pyramids: $V=\frac{1}{3} B \cdot H$ | The sum of all triangular sides areas + B |  |
| Cone: $\mathrm{V}=\frac{1}{3} \text { B. } \mathrm{H}=\frac{1}{3} \pi r^{2} \mathrm{H}$ | $\begin{aligned} & \pi \mathrm{rs}+\pi r^{2}, \\ & \text { with: } \quad s=\sqrt{r^{2}+H^{2}} \end{aligned}$ |  |
| Sphere: $V=\frac{4}{3} \pi r^{3}$ <br> $r$ is the radius | $4 \pi r^{2}$ |  |
| Oblique Prisms: $V=B \cdot H$ | The sum of all parallelogram sides areas $+2 B$ |  |
| Oblique Cylinder: $\mathrm{V}=\pi \mathrm{r}^{2} \mathrm{H}$ | The sum of the parallelogram side $+2 \pi r^{2}$ |  |

