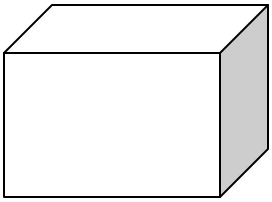
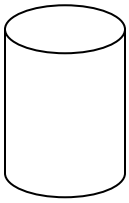
Volume and Surface Area of Prisms and Cylinders



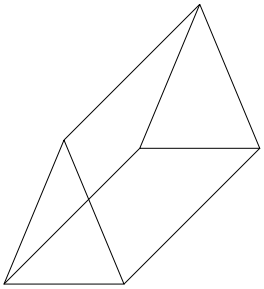
Volume $V = l\ x\ w\ x\ h$

Surface Area $SA = \ 2(l\ x\ w) + \ 2(l\ x\ h) + \ 2(w\ x\ h)$



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

Surface Area $SA = 2\pi r^2 + \ 2\pi rh$



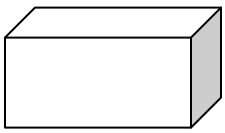
Volume $V = \ \frac{1}{2} b\ x\ h\ x\ l$

Surface Area $SA = (b\ x\ h) + 2(l\ x\ s) + \ (b\ x\ l)$

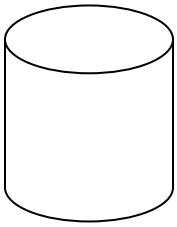
Examples:

1. Determine the **surface area** and **volume** of the following figures:

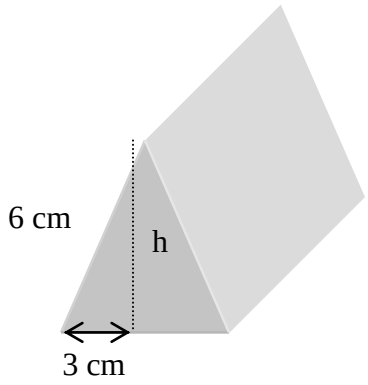
a) Rectangular prism with length 60 cm, width 25 cm and height 40 cm.



b) Cylinder with radius 3.7 cm and height 11 cm.



c) Triangular prism with length 30 cm and the following dimensions:



2. The box of a dump truck measures 30 feet by 9 feet by 6 feet. How many cubic yards of gravel will the dump truck hold?

3. A 60 cm cardboard tube is open at both ends. Its surface area is 950 cm^2. Determine its radius.

4. A railway car approximates a rectangular prism. It has a volume of 82.5 m^3. The car is 3 m wide and 11 m long. Determine the height of the railway car.