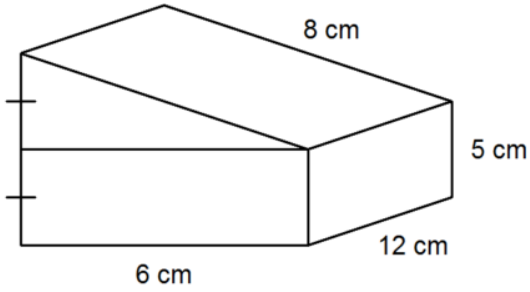
1. This object is composed of a right triangular prism on top of a right rectangular prism. Determine the surface area of the object.



* Area of rect. prism.
* Area of tri. prism.
* Only calc. exposed faces.

Rect. Prism

$2(12\times5)+2(6\times5)+(6\times12)$

$= 2(60)+2(30)+72 = \underline{252}\ cm^2$

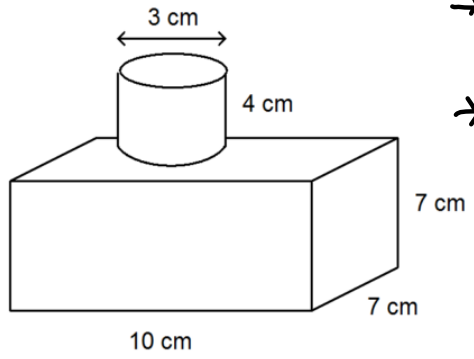
Tri Prism

$\frac{1}{2}(5\times6)\times2 + (12\times8) + (12\times5)$

$= 30 + 96 + 60 = \underline{186}\ cm^2$

Total Area = $438\ cm^2$

2. Determine the surface area of this composite object, to the nearest square centimetre.
The cylinder has diameter 3 cm and height 4 cm.
The prism has length 10 cm, width 7 cm, and height 7 cm.



* Area rect. prism
* Area of cylinder
* watch for covered surfaces!

Rect. Prism

$2(10\times7) + 2(7\times7) + 2(10\times7)$

$= 140 + 98 + 140 = 378\text{ cm}^2$

Cylinder

$\pi(1.5)^2 + 2\pi(1.5)(4)$

Top — Round the cylinder

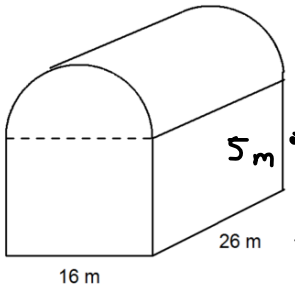
$= 7.07 + 37.7 = 44.77\text{ cm}^2$

Total Area $= 378 + 44.77 - 7.07$

Bottom of cylinder

Total = 416 cm²

3. A barn is built in the shape of a right rectangular prism with a semi-circular roof. Determine the surface area of the barn. Give your answer to the nearest whole number.



* Area rect. prism
* ½ of a cylinder
* Do NOT include bottom of barn.

Rect. Prism

$2(16\times5)+2(26\times5)$

$=2(80)+2(130) = 420\,m^2$

½ of a Cylinder

$$\frac{2\pi(8)^2 + 2\pi(8)(26)}{2}$$ ← Area of full cylinder ← But only want half

$$=\frac{402.1+1307}{2} = \frac{1709}{2} = 854\,m^2$$

Total Area of Barn $= 420 + 854$

$= 1274\,m^2$