Homework solutions

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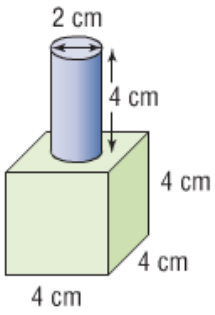
3 a) cylinder on a cube



radius=

height=

Cube

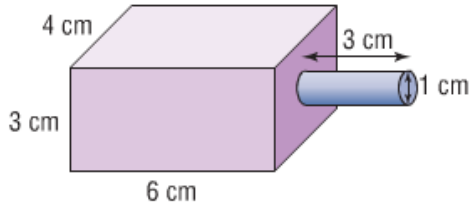
Area = Base x height

Cylinder

Area of cylinder = ~~2~~$\pi r^2 + 2\pi rh$

Total SA = Cylinder + Cube - Overlap

3 b) cylinder on a rectangular prism



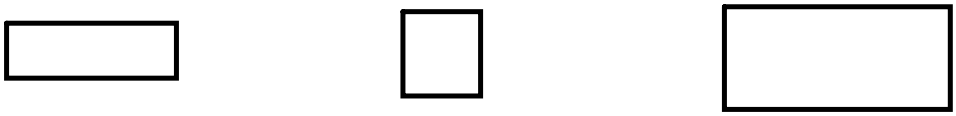
radius=

height=

Cylinder

Area of cylinder = $2\pi r^2 + 2\pi rh$

Rectangular Prism (___, ___, ___)



Total SA = Cylinder + Rect Prism - Overlap

Homework solutions

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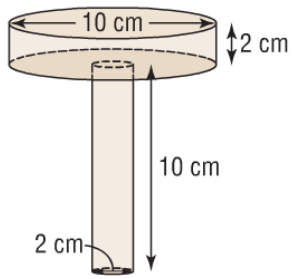
3c c) cylinder on a cylinder



Cylinder

long tube radius= height=

Area of cylinder = ~~2~~$\pi r^2 + 2\pi rh$

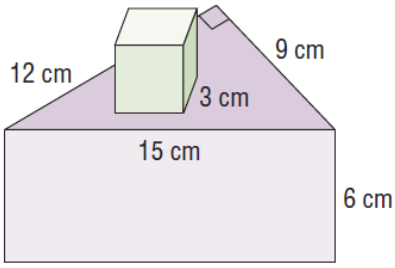
Cylinder

puck shape radius= height=

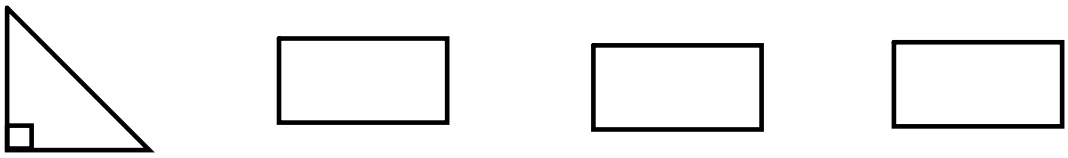
Area of 2nd cylinder = ~~2~~$\pi r^2 + 2\pi rh$

Total SA = Cylinder + Cylinder - Overlap

d) cube on a triangular prism



Triangular Prism

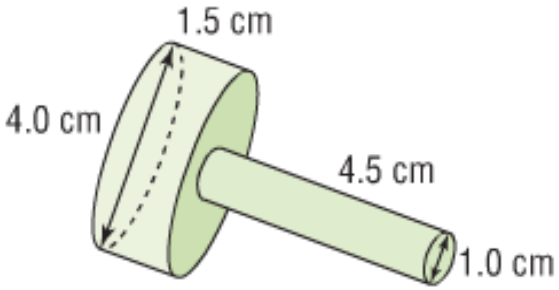


Cube

Total SA = Triangular Prism + Cube - Overlap

4

a)



Cylinder

Top: radius = ___, height =____

Area of cylinder = $2\pi r^2 + 2\pi rh$

Cylinder

Long: radius = ___, height =____

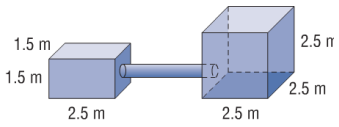
Area of cylinder = $2\pi r^2 + 2\pi rh$

Total SA = Cylinder + Cylinder - Overlap

Homework solutions

Solutions

4 b) The cylinder is 3.5 m long with diameter 0.5 m.



Cylinder

radius= ___, height=_____

Area of cylinder = $2\pi r^2 + 2\pi rh$

Rectangle Prism (___, ___, ___)

SA Prism =

Cube (___, ___, ___)

Total SA= Rectangular Prism + Cube + Cylinder - Total Overlap
= 19.5 m^2 + 37.5 m^2 + 5.8875 m^2 - 0.785 m^2

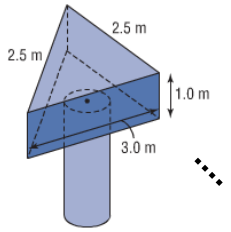
= 61.6025 m^2

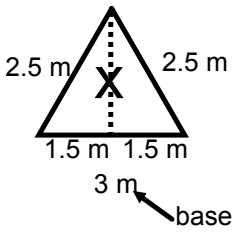
Or if you rounded to the nearest thenth

Total SA= Rectangular Prism + Cube + Cylinder - Total Overlap
= 19.5 m^2 + 37.5 m^2 + 5.8875 m^2 - 0.785 m^2
= 19.5 m^2 + 37.5 m^2 + 5.9 m^2 - 0.8 m^2
= 62.1 m^2

5. Determine the surface area of each composite object.

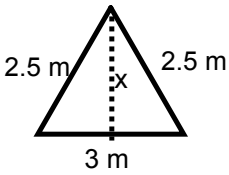
a) The cylinder is 2.5 m long with radius 0.5 m.

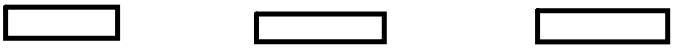




Triangular prism

$A = \frac{b \times h}{2}$





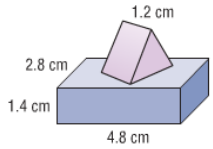
Total SA Triangular Prism = 2 triangles + rectangle + rectangle + rectangle

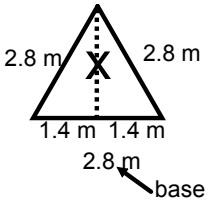
Cylinder radius= ___, height=___

Area of cylinder = $2\pi r^2 + 2\pi rh$

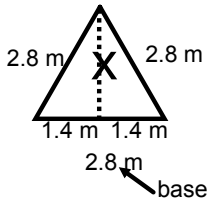
Total Surface = Triangular Prism + Cylinder - total overlap

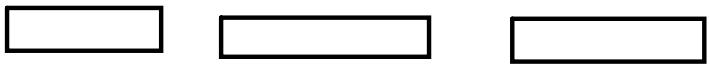
b) The base of the triangular prism is an equilateral triangle with side length 2.8 cm.





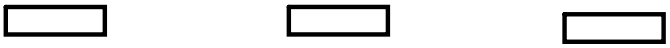
Triangular prism





SA Triangular Prism =

Prism (__, __, __)

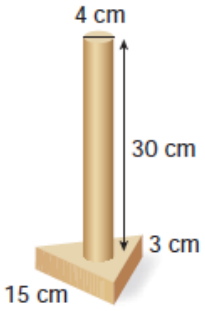


Surface area Prism =

Total SA = Triangular Prism + Rectangular Prism - overlap

Apply

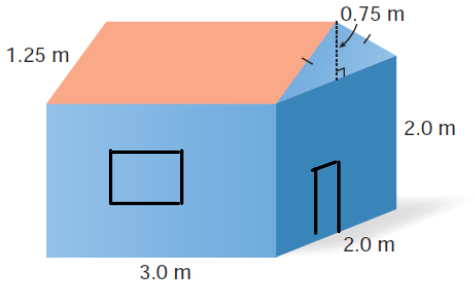
6. Here is the lamp stand from the top of page 33. The base of the lamp is a triangular prism with an equilateral triangle base. The surface of the stand is to be painted. What is the area that will be painted? Give the answer to the nearest whole number.



It has a floor

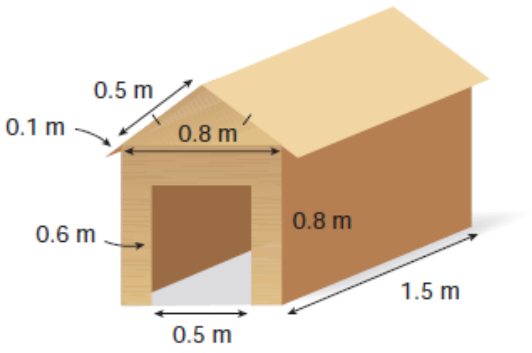
7. Assessment Focus

a) A playhouse has the shape of a rectangular prism with a triangular prism roof. Determine the surface area of the playhouse.



b) Door is 0.5m x 1m
2 Windows 1m x 1 m

8. Jemma has built this doghouse. The roof is a triangular prism with an isosceles triangle base. There is an overhang of 0.1 m. There is an opening for the doorway.



a) Determine the surface area of the doghouse.