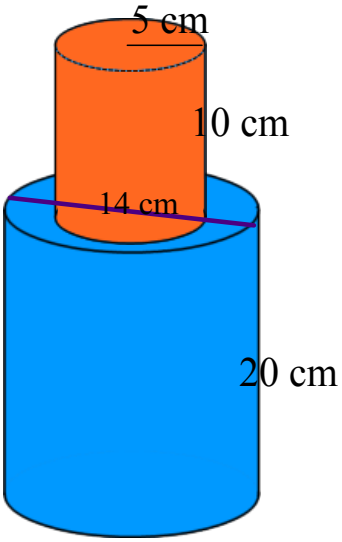
Section 1.4



Find the surface area of the following object

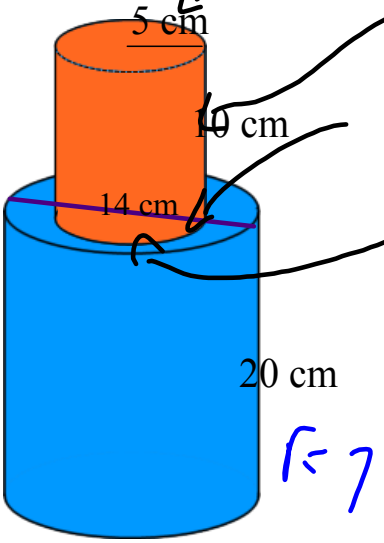
$2\pi r^2 + 2\pi rh$

Individually

Total SA = Blue + Orange - Overlap

Section 1.4

SOLUTION TO WARM UP



Find the surface area of the following object

$2\pi r^2 + 2\pi rh$

BEDMAS

Overlap:

Area of circle = πr^2
$= (3.14)(5\text{ cm})^2$
$= (3.14)\ 25\text{ cm}^2$
$= 78.5\text{ cm}^2$

Bottom of Orange + top of Blue

r = 7

X 2 since 2 faces involved

157 cm^2

Area I can't see

Individually

Area of orange cylinder = $2\pi r^2 + 2\pi rh$
$= 2(3.14)(5\text{cm})^2 + 2(3.14)(5\text{cm})(10\text{cm})$
$= 2(3.14)(25\text{cm}) + 2(3.14)(5\text{cm})(10\text{cm})$
$= 157\text{ cm}^2 + 314\text{ cm}^2$
$= 471\text{ cm}^2$

BEDMAS

r = 5
h = 10

Area of Blue cylinder = $2\pi r^2 + 2\pi rh$
$= 2(3.14)(7\text{cm})^2 + 2(3.14)(7\text{cm})(20\text{cm})$
$= 2(3.14)(49\text{cm}) + 2(3.14)(7\text{cm})(20\text{cm})$
$= 307.72\text{ cm}^2 + 879.2\text{ cm}^2$
$= 1186.92\text{ cm}^2$

different radius and height.

r = 14
r = 7

Total SA = Blue + Orange - Overlap
$= 1186.92\text{ cm}^2 + 471\text{cm}^2 - 157\text{ cm}^2$
$= 1500.92\text{ cm}^2$

Homework solutions

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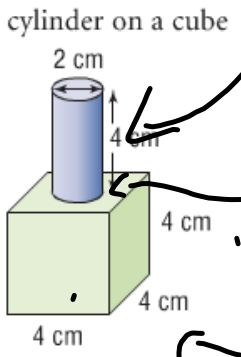
3 a) cylinder on a cube



Cylinder

circle.

Cube

$\frac{1}{2}d = r$

Overlap:

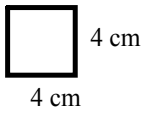
Area of circle = πr^2
$= (3.14)(1\ cm)^2$
$= (3.14)\ 1\ cm^2$
$= 3.14\ cm^2$

$\times 2$ since 2 faces involved

$6.28\ cm^2$

Area of cylinder = $2\pi r^2 + 2\pi rh$
$= 2(3.14)(1cm)^2 + 2(3.14)(1cm)(4cm)$
$= 2(3.14)(1cm) + 2(3.14)(1cm)(4cm)$
$= 6.28\ cm^2 + 25.12\ cm^2$
$= 31.4\ cm^2$

Rectangular Cube

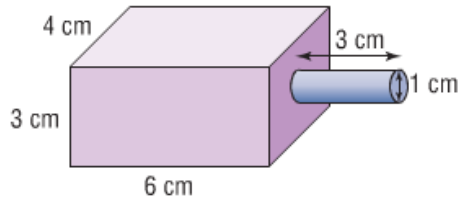


area = 4cm x 4cm
$= 16\ cm^2$

Area = 6 faces x (area of one face)
$= 6 \times (16\ cm^2)$
$= 96\ cm^2$

Total SA = Cylinder + Cube - Overlap
$= 31.4\ cm^2 + 96\ cm^2 - 6.28\ cm^2$
$= 121.12\ cm^2$
$= 121\ cm^2$

3 b) cylinder on a rectangular prism



Overlap:

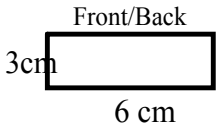
Area of circle = πr^2
= (3.14) (0.5 cm)^2
= (3.14) 0.25 cm^2
= 0.785 cm^2

X 2 since 2 faces involved

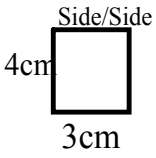
1.57 cm^2

Area of cylinder = $2\pi r^2 + 2\pi rh$
= $2(3.14)(0.5cm)^2 + 2(3.14)(0.5cm)(3cm)$
= $2(3.14)(0.25cm) + 2(3.14)(0.5cm)(3cm)$
= 1.57 cm^2 + 9.42 cm^2
= 10.99 cm^2

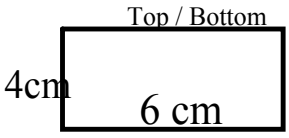
Rectangular Prism



A = 3cm x 6 cm
= 18 cm^2



A = 3cm x 4 cm
= 12 cm^2

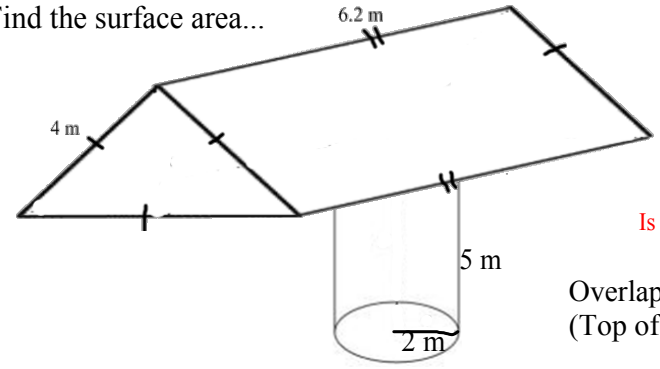


A = 4cm x 6 cm
= 24 cm^2

Rectangular Prism SA = 2(18 cm^2) + 2(12cm^2) + 2(24cm^2)
= 36 cm^2 + 24cm^2 + 48cm^2
= 108cm^2

Total SA = Cylinder + Rect Prism - Overlap
= 10.99 cm^2 + 108 cm^2 - 1.57 cm^2
= 117.42 cm^2
= 117 cm^2

Find the surface area...

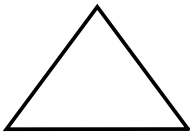


Is there overlap? where?

Overlapped surface area =
(Top of cylinder, circle)

suface area of Triangle:
Height: _____

Base: ____



Surface area of Rectangles=

Total Surface Area of Triangular Prism =

Cylinder

Surface area of Cylinder =

Total Surface Area = Triangular Prism + Cylinder - OVERLAP

Class / Homework

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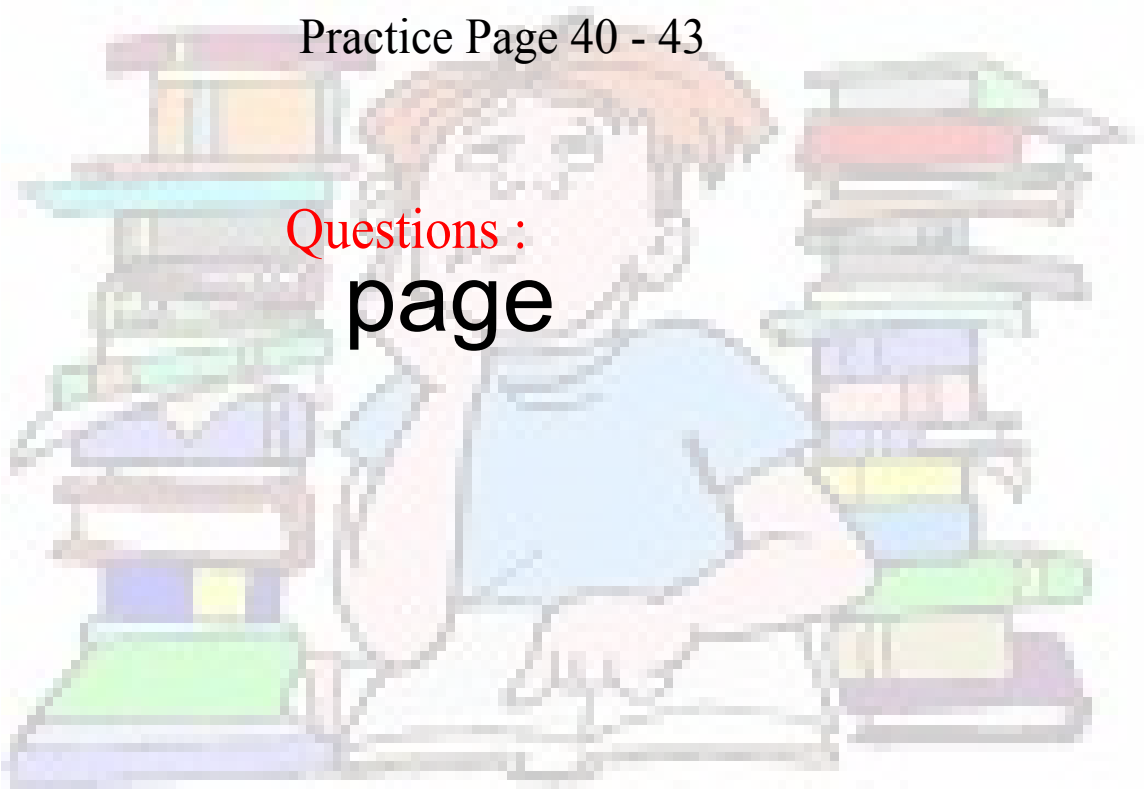

Questions :

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