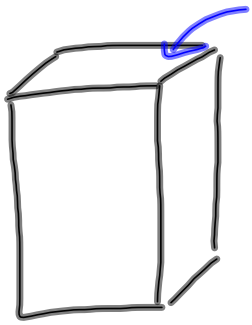
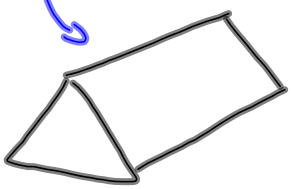
Surface Area

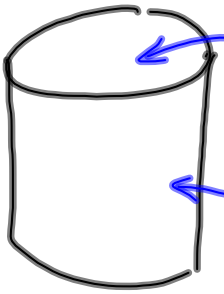
How would you find the surface area of...



Find the area of each face and total them up.



Cylinder



two circles: $2\pi r^2$

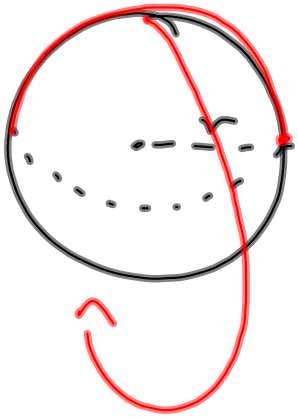
"Label"

$2\pi r \times h$

circumference height

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

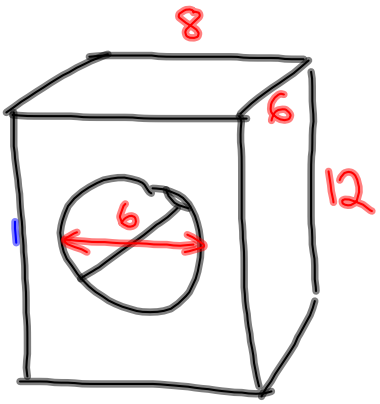
Sphere



$$SA = \int_0^{\pi}\int_0^{2\pi} r\sin\phi \, d\phi \, d\theta$$

$$= 4\pi r^2$$

Ex. Determine the SA of the following solid.



$SA_{box} = 2(8\times6)+2(6\times12)+2(8\times12)$

$= 432$

Two circles: $2\pi r^2$

$= 2\pi(3)^2$

$= 56.5$

"Label" $= 2\pi(3)(6)$

$= 113.1$

$\rightarrow 488.6$

686
440.55
488.5
488.55

Pg. 138 #14, 17, 19