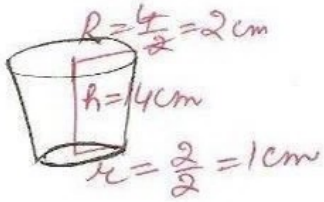
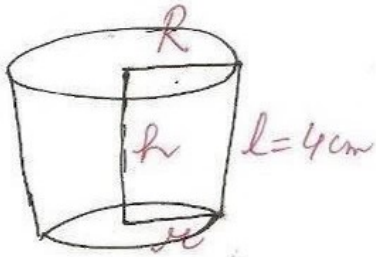
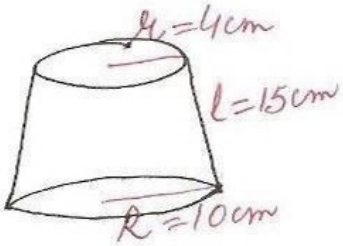
ex 13.4

① 

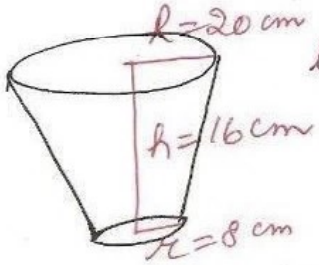
Capacity of glass
$= \frac{1}{3}\pi h(R^2+r^2+Rr)$
$= \frac{1}{3}\times\frac{22}{7}\times 14(2^2+1^2+2\times1)$
$= \frac{44}{3}\times 7$
$= \frac{308}{3}$
$= 102.67\ cm^3$

② 

CSA of frustum
$= (\pi R+\pi r)l$
$= (2\pi R+2\pi r)\frac{l}{2}$ [Mul and div. by 2]
$= (18+6)\times\frac{4}{2}$
$= 24\times 2$
$= 48\ cm^2$

③ 

area of material used
$= \pi l(r+R)+\pi r^2$
$= \pi[l(r+R)+r^2]$
$= \frac{22}{7}[15(4+10)+4^2]$
$= \frac{22}{7}(210+16)$
$= \frac{22}{7}\times 226$
$= \frac{4906}{7}\ \frac{4972}{7}$
$= 710.28\ cm^2$

④ 

$l = \sqrt{h^2+(R-r)^2}$
$= \sqrt{16^2+(20-8)^2}$
$= \sqrt{400}$
$= 20\ cm$

Volume of milk
$= \frac{1}{3}\pi h(R^2+r^2+Rr)$
$= \frac{1}{3}\times 3.14\times 16(20^2+8^2+20\times8)$
$= \frac{3.14\times16}{3}\times 4\times4(5^2+2^2+5\times2)$
[taking 4×4 common]
$= \frac{3.14\times16\times16}{3}\times 39$ (13)
$= 10449.92\ cm^3$
$= 10.44992\ l$
$= 10.45\ l$

Cost of milk $= 20\times 10.49$
$= Rs\ 209$

Metal sheet used
$= \pi l(R+r)+\pi r^2$
$= \pi[l(R+r)+r^2]$
$= 3.14[20(20+8)+8^2]$
$= 3.14(560+64)$
$= 3.14\times 624$
$= 1959.36\ cm^2$
Cost $= 8\times 1959.36$
$= Rs\ 156.75$