Surface Area and Volume of Conical Frustums (F)
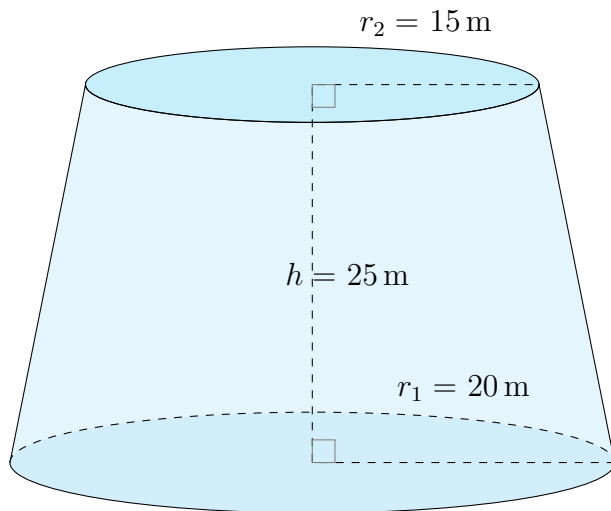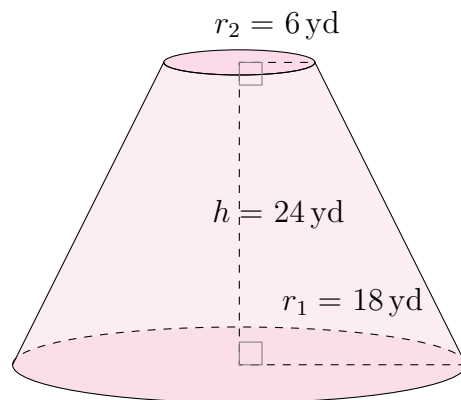
Calculate the surface area and volume for each conical frustum.

Surface Area $= \pi(r_1 + r_2)\sqrt{(r_1 - r_2)^2 + h^2} + \pi r_1{}^2 + \pi r_2{}^2$ Volume $= \dfrac{\pi}{3}h(r_1{}^2 + r_2{}^2 + r_1 r_2)$

1.

$r_2 = 15\,\text{m}$

$h = 25\,\text{m}$

$r_1 = 20\,\text{m}$

2.

$r_2 = 6\,\text{yd}$

$h = 24\,\text{yd}$

$r_1 = 18\,\text{yd}$

3.

$r_2 = 6\,\text{nm}$

$h = 30\,\text{nm}$

$r_1 = 24\,\text{nm}$

4.

$r_2 = 18\,\text{yd}$

$h = 54\,\text{yd}$

$r_1 = 27\,\text{yd}$

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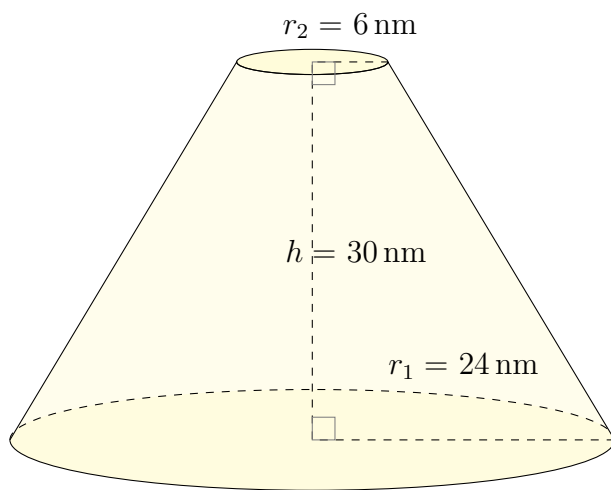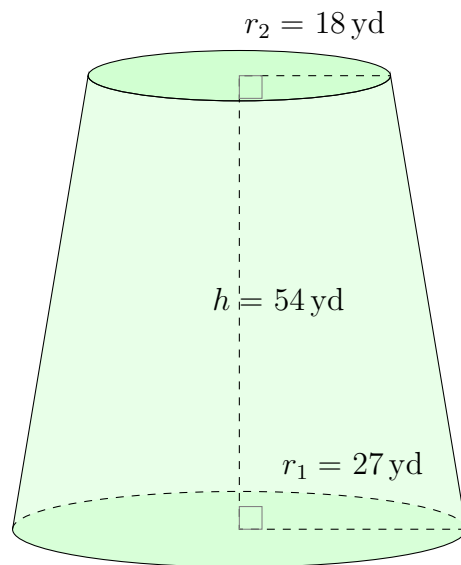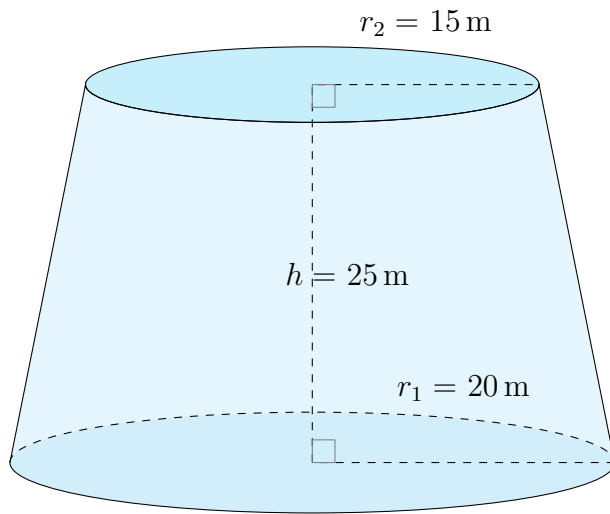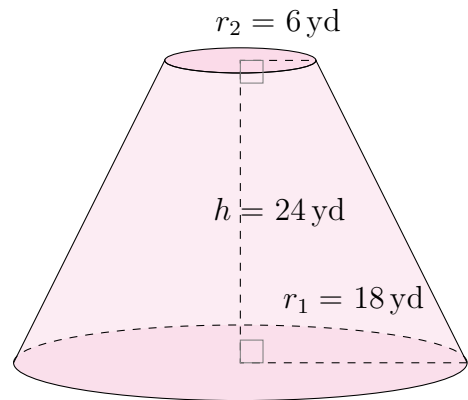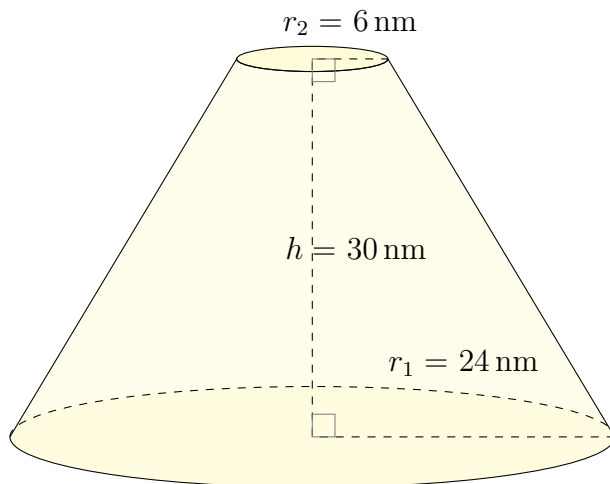
1.

$r_2 = 15\,\mathrm{m}$

$h = 25\,\mathrm{m}$

$r_1 = 20\,\mathrm{m}$

Surface Area: $4767\,\mathrm{m}^2$
Volume: $24{,}216\,\mathrm{m}^3$

2.

$r_2 = 6\,\mathrm{yd}$

$h = 24\,\mathrm{yd}$

$r_1 = 18\,\mathrm{yd}$

Surface Area: $3154\,\mathrm{yd}^2$
Volume: $11{,}762\,\mathrm{yd}^3$

3.

$r_2 = 6\,\mathrm{nm}$

$h = 30\,\mathrm{nm}$

$r_1 = 24\,\mathrm{nm}$

Surface Area: $5220\,\mathrm{nm}^2$
Volume: $23{,}750\,\mathrm{nm}^3$

4.

$r_2 = 18\,\mathrm{yd}$

$h = 54\,\mathrm{yd}$

$r_1 = 27\,\mathrm{yd}$
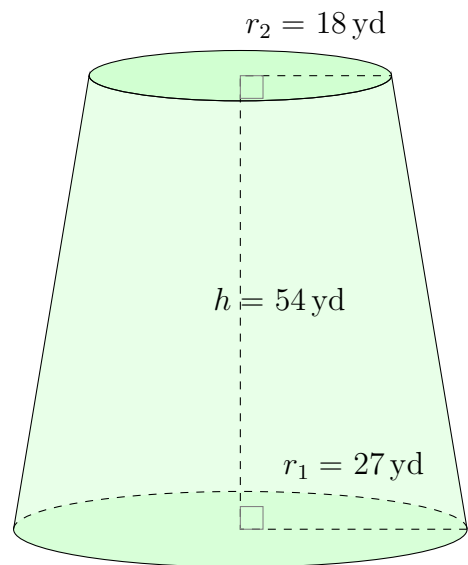
Surface Area: $11{,}047\,\mathrm{yd}^2$
Volume: $87{,}028\,\mathrm{yd}^3$