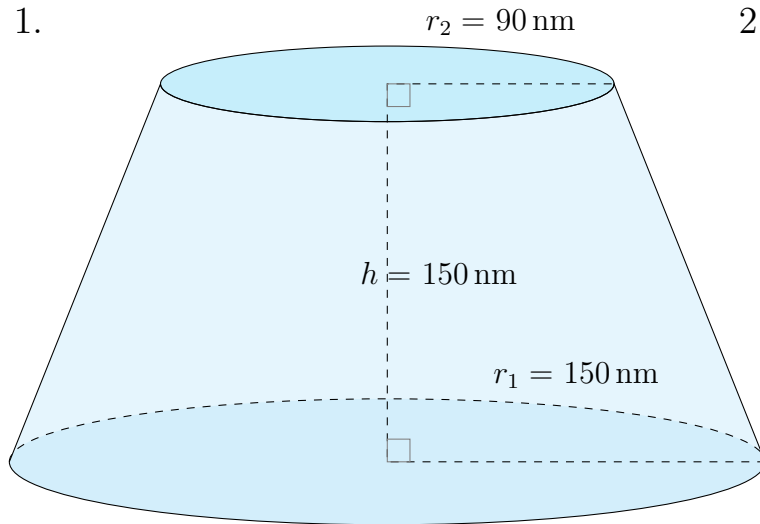


Surface Area and Volume of Conical Frustums (F)

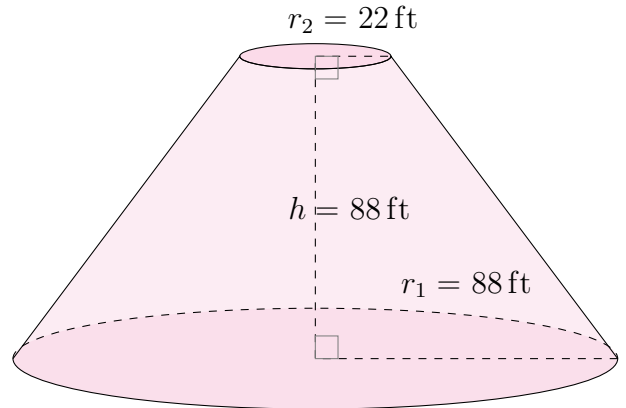
Calculate the surface area and volume for each conical frustum.

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

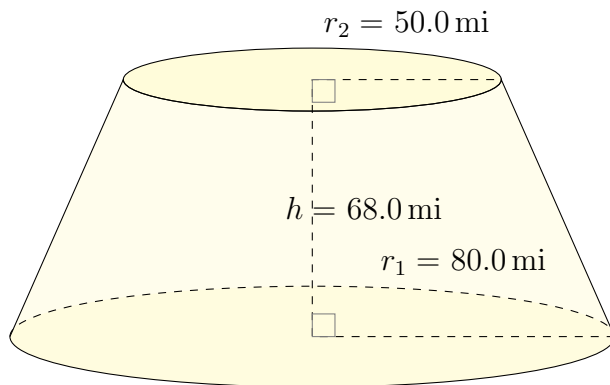
1.



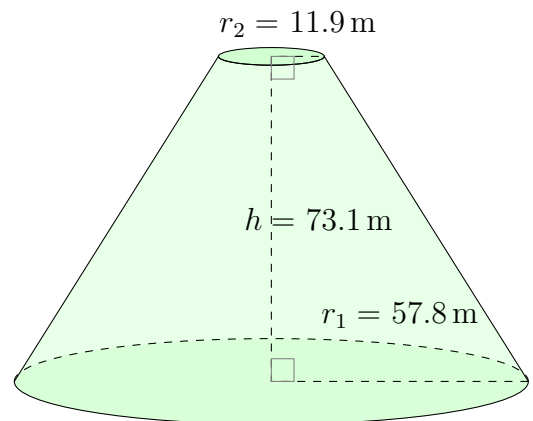
2.



3.



4.

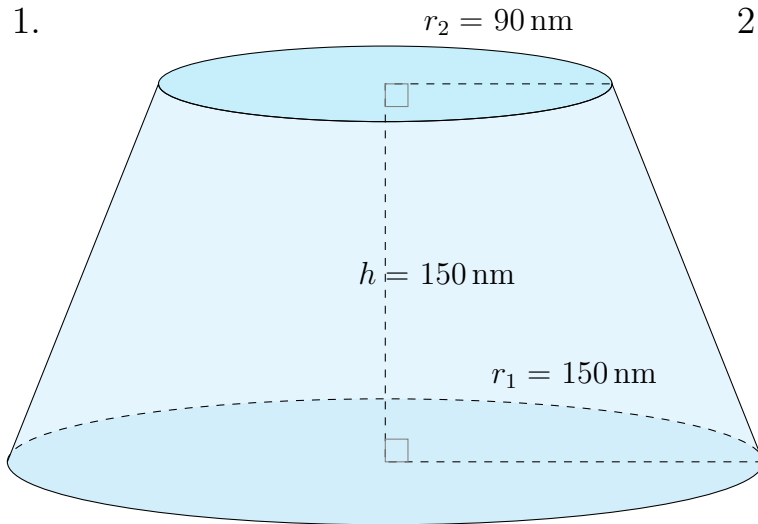


Surface Area and Volume of Conical Frustums (F) Answers

Calculate the surface area and volume for each conical frustum.

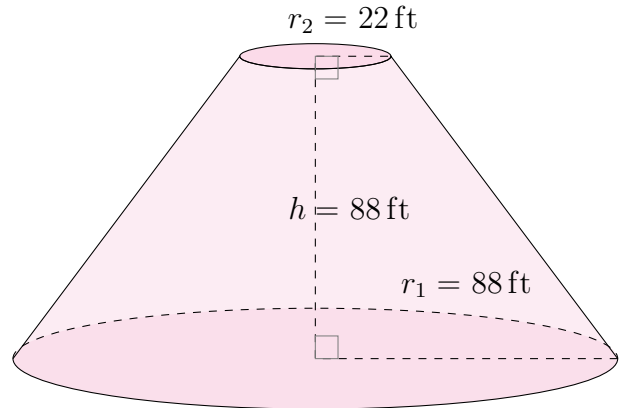
$$\text{Surface Area} = \pi(r_1 + r_2)\sqrt{(r_1 - r_2)^2 + h^2} + \pi r_1^2 + \pi r_2^2 \quad \text{Volume} = \frac{\pi}{3}h(r_1^2 + r_2^2 + r_1 r_2)$$

1.



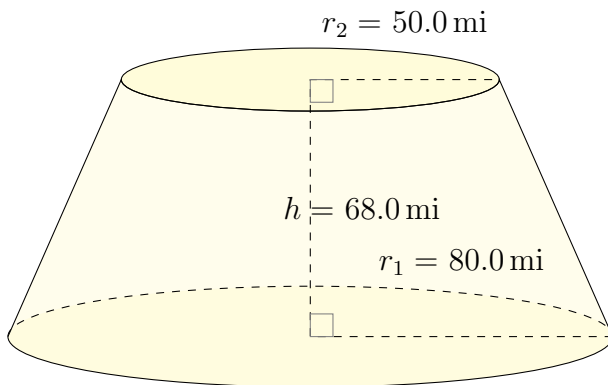
Surface Area: $217,942 \text{ nm}^2$
Volume: $6,927,212 \text{ nm}^3$

2.



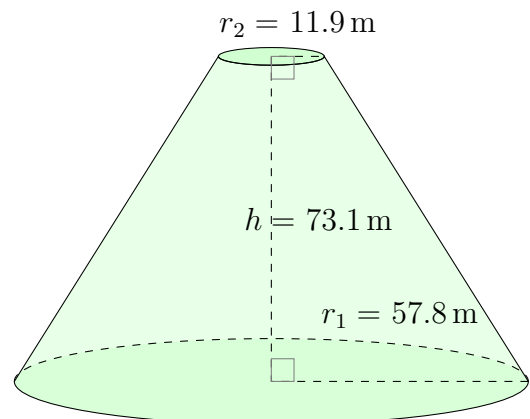
Surface Area: $63,862 \text{ ft}^2$
Volume: $936,647 \text{ ft}^3$

3.



Surface Area: $58,314.5 \text{ mi}^2$
Volume: $918,601.7 \text{ mi}^3$

4.



Surface Area: $29,840.9 \text{ m}^2$
Volume: $319,234.8 \text{ m}^3$