

Related Rates Quiz

1. Sand is poured onto a surface at $15 \text{ cm}^3/\text{sec}$, forming a conical pile whose base diameter is always equal to its altitude ($h = d$). How fast is the altitude of the pile increasing when the pile is 3 cm high? (Hint: the volume of a cone was mentioned in class. You will need to use the fact that $h = d$ and the relationship between diameter and radius of a circle).