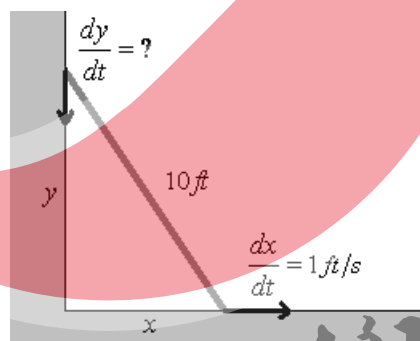# 4.5 Related Rates

Ex 1: Air is being pumped into a spherical balloon so that its volume increases at a rate of $100\,^{cm^3}\!/\!_s$. How fast is the radius of the balloon increasing when the radius is $25cm$.

Ex 2: A ladder $10\,ft$ long rests against a vertical wall. If the bottom of the ladder slides away from the wall at a rate of $1\,ft/s$, how fast is the top of the ladder sliding down the wall when the bottom of the ladder is $6\,ft$ from the wall.