

4D Checkup

1. Inge flies a kite at a height of 300ft, the wind carrying the kite horizontally away at a rate of 25 ft/sec. How fast must she let out the string when the kite is 500ft away from her?

2. Sand falls from a conveyor belt at the rate of $10\text{m}^3/\text{min}$ onto the top of a conical pile. The height of the pile is always three-eighths of the base diameter. How fast are the (a) height and (b) radius changing when the pile is 4m high? Give you answer in cm/min.

3. $f(x) = x^3 + x - 1 = 0$