

Related Rates

1. If a snowball melts so that its surface area decreases at a rate of $1\text{cm}^2/\text{min}$, find the rate at which the radius decreases when the radius is 10cm .
2. At noon, ship A is 150km west of ship B . Ship A is sailing east at 35km/h , and ship B is sailing north at 25km/h . How fast is the distance between the ships changing at 4pm ?
3. A lighthouse is located on a small island 3km away from the nearest point P on a straight shoreline, and its light moves around at a rate of 4 radians/minute. How fast is the beam of light moving along the shoreline when the beam of light is 1km from P ?