

Related Rates

Problem 1

A cylinder is leaking water but you are unable to determine at what rate. The cylinder has a height of 2 m and a radius of 2 m. Find the rate at which the water is leaking out of the cylinder if the rate at which the height is decreasing is 10 cm/min when the height is 1 m.

Problem 2

A 10 foot long ladder leans against a wall. The base of the ladder is pulled away from the wall at a speed of 2 ft/sec. The ladder and the floor form an acute angle as the ladder moves. At what rate is the angle changing when the base is 3 feet from the wall?

Problem 3

A triangle has a height that is increasing at a rate of 2 cm/sec and its area is increasing at a rate of 4 cm²/sec. Find the rate at which the base of the triangle is changing when the height of the triangle is 4 cm and the area is 20 cm².