Optimization Problem : A rectangular fenced area is to be built against the side of a barn. There is 360 feet of fencing material which only needs to be used on three sides of the enclosure since the wall of the barn will provide the last side. What dimensions should be used to maximize the area of the enclosure?

Related Rates Examples

1) A rocket, rising vertically, is tracked by a radar station that is on the ground 3000 ft from the launching pad. At what rate is the angle of elevation changing when the rocket is 4000 ft up and rising vertically at 5000ft/sec?

2) A ladder 25 ft long is leaning against the wall of a house. The base of the ladder is pulled away from the wall at a rate of 2 ft/sec. How fast is the top of the ladder moving down the wall when its base is 7 ft from the wall?

3) A conical tank (with vertex down) is 12 ft across and 10 ft deep. If water is flowing into the tank at a rate of 5 ft^3/min, find the rate of change of the depth of the water when the water is 6 ft deep.