8.) (12 pts.) Find an equation of the line perpendicular to the graph of $y = \dfrac{\sqrt{x}}{(x^2+1)^2}$ at $x = 1$.

9.) (12 pts.) A ladder 10 feet long is leaning against a wall. If the base of the ladder is pushed toward the wall at the rate of 3 ft./sec., at what rate is the top of the ladder moving up the wall when the base of the ladder is 6 feet from the wall ?

10.) (12 pts.) A tank is in the shape of a right circular cone (vertex down) of height 10 feet and radius 5 feet. Water fills the tank at the rate of π ft.^{3}/min. At what rate is the radius r of the circular surface area of the water in the tank increasing when the depth of the water is $h = 9$ feet ? RECALL : The volume of a cone of height h and radius r is $V = (1/3)\pi r^2 h$.