Trigonometry — Related Rates

1. A 3-m ladder leans against a house on flat ground. The base of the ladder starts to slide away from the house at 2 m/s. At what rate is the angle between the ladder and the ground changing when the base is 1 m from the house?

2. If the height h of an isosceles triangle with base 4 m changes at a rate $\frac{dh}{dt} = 3$ m/s, how quickly is the angle opposite the base changing when $h = 2\sqrt{3}$ m?