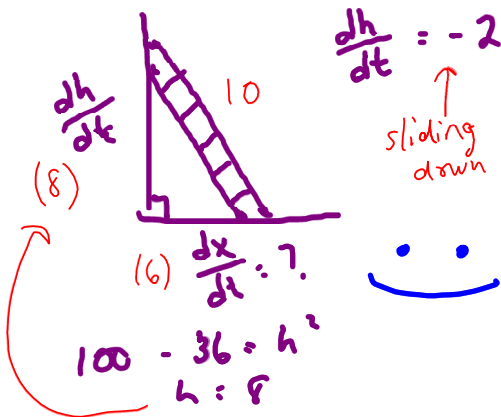


## Related Rates (cont'd)

The top of a 10 foot ladder is sliding down the side of a house at a rate of 2 ft/s. How fast is the base of the ladder moving when it is 6 ft from the base of the house?



pyth thm  
to find h  
when x is 6

$h^2 + x^2 = 10^2$  implicit diff  
 $2h \frac{dh}{dt} + 2x \frac{dx}{dt} = 0$   
 $2(8)(-2) + 2(6) \frac{dx}{dt} = 0$   
 $12 \frac{dx}{dt} = 32$   
 $\frac{dx}{dt} = \frac{8}{3} \text{ ft/s}$

worksheet  
# 1, 3, 7, 9, 13