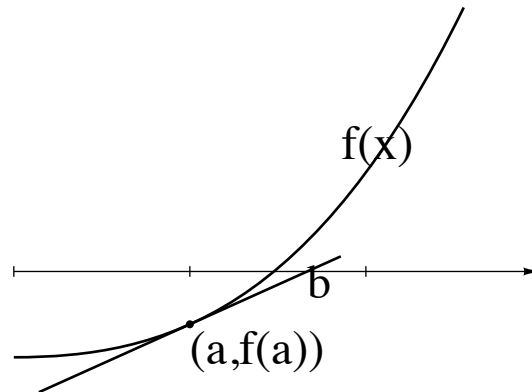


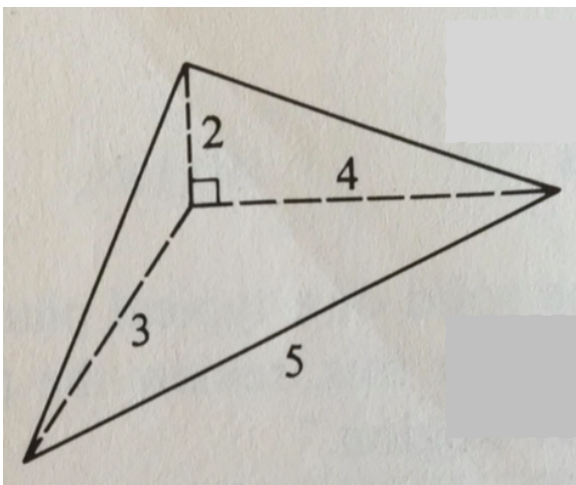
1. Tangent Roots

- (a) Find $t(x)$, the Taylor form equation of the line tangent to $f(x)$ at $(a, f(a))$.



- (b) Assume that b is the x -intercept for $t(x)$. Solve for b in terms of a , $f(a)$, $f'(a)$.

2. Demonstrate how to setup an equation for a volume element (dV), setup an equation for an integral (V), and evaluate the integral to compute the volume of a solid triangular pyramid whose base is a right triangle of sides 3, 4, and 5 meters. The apex of the pyramid is 2 meters directly above the vertex of the right angle. Be sure to include a diagram showing the pyramid and a typical volume element parallel to the base, and state the meaning of any variables you use. Finally check your answer using what you know from geometry.



3. Evaluate $L = \lim_{x \rightarrow 0^+} x \ln x$.