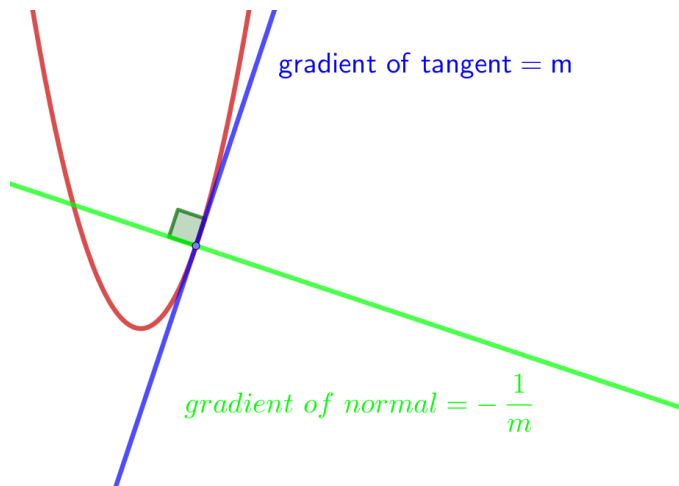


Tangents and Normals

A **tangent** is a straight line that touches a curve at one and only one point. The gradient of a tangent line is equal to the gradient of the curve at that point.

A **normal** line to a curve is the line that is **perpendicular** to the tangent to a curve at a particular point. We can find the gradient of the normal from the gradient of the tangent



To find the equation of a tangent or normal, we need to use the equation of straight line

$$y = mx + c$$

gradient y intercept

Often we are required to find the intersection of a tangent (or normal) line and the curve.

To find point P, the intersection of the normal at A and the curve in the case below, we need to solve

