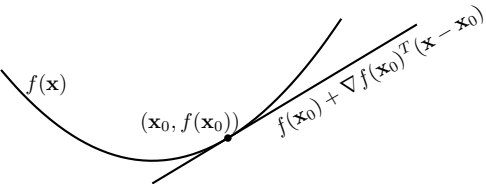
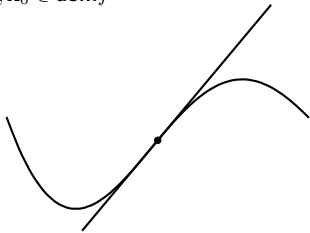


f is differentiable with convex domain

f is convex iff $f(\mathbf{x}) \geq f(\mathbf{x}_0) + \nabla f(\mathbf{x}_0)^T (\mathbf{x} - \mathbf{x}_0), \forall \mathbf{x}, \mathbf{x}_0 \in \mathbf{dom} f$



convex function



nonconvex function