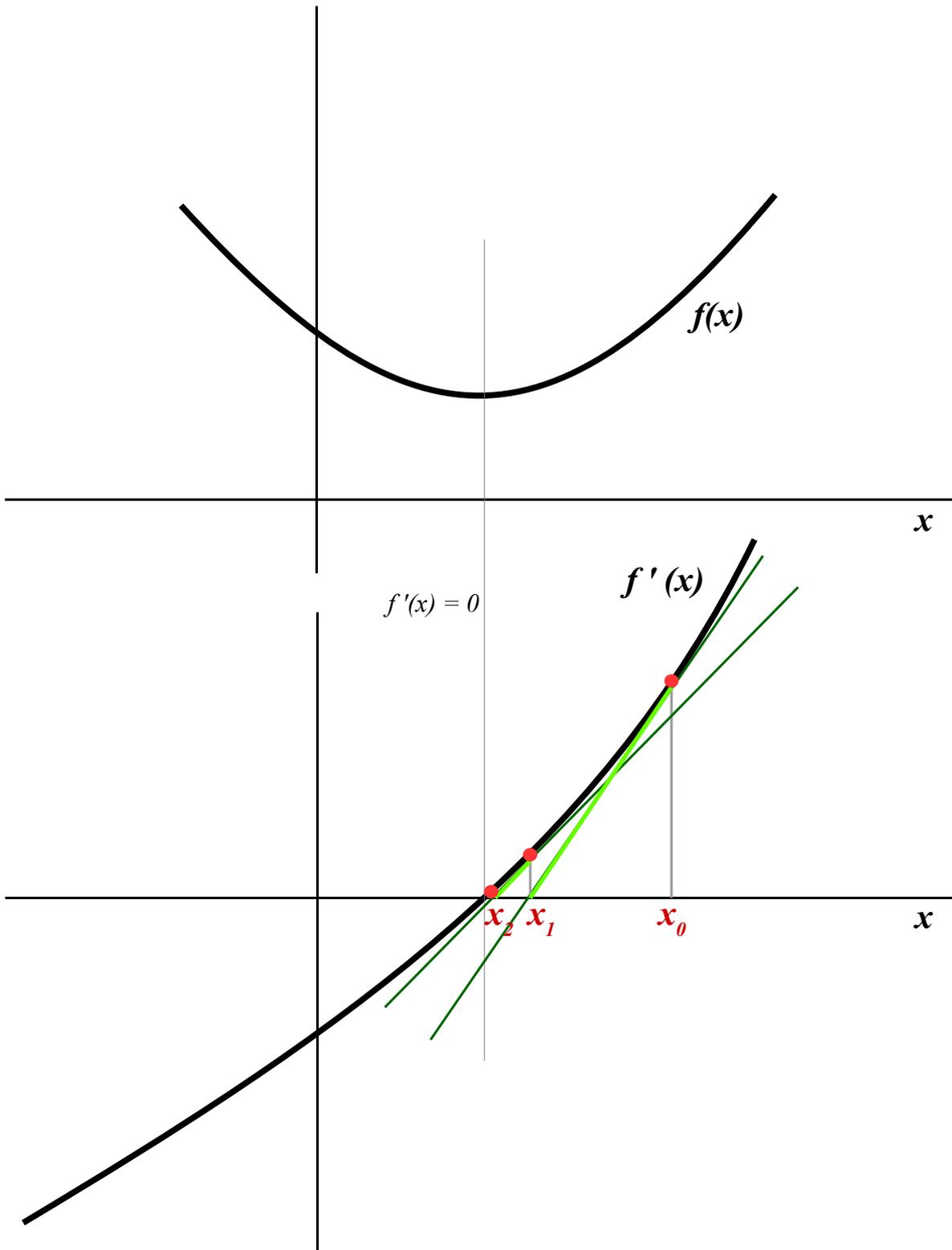
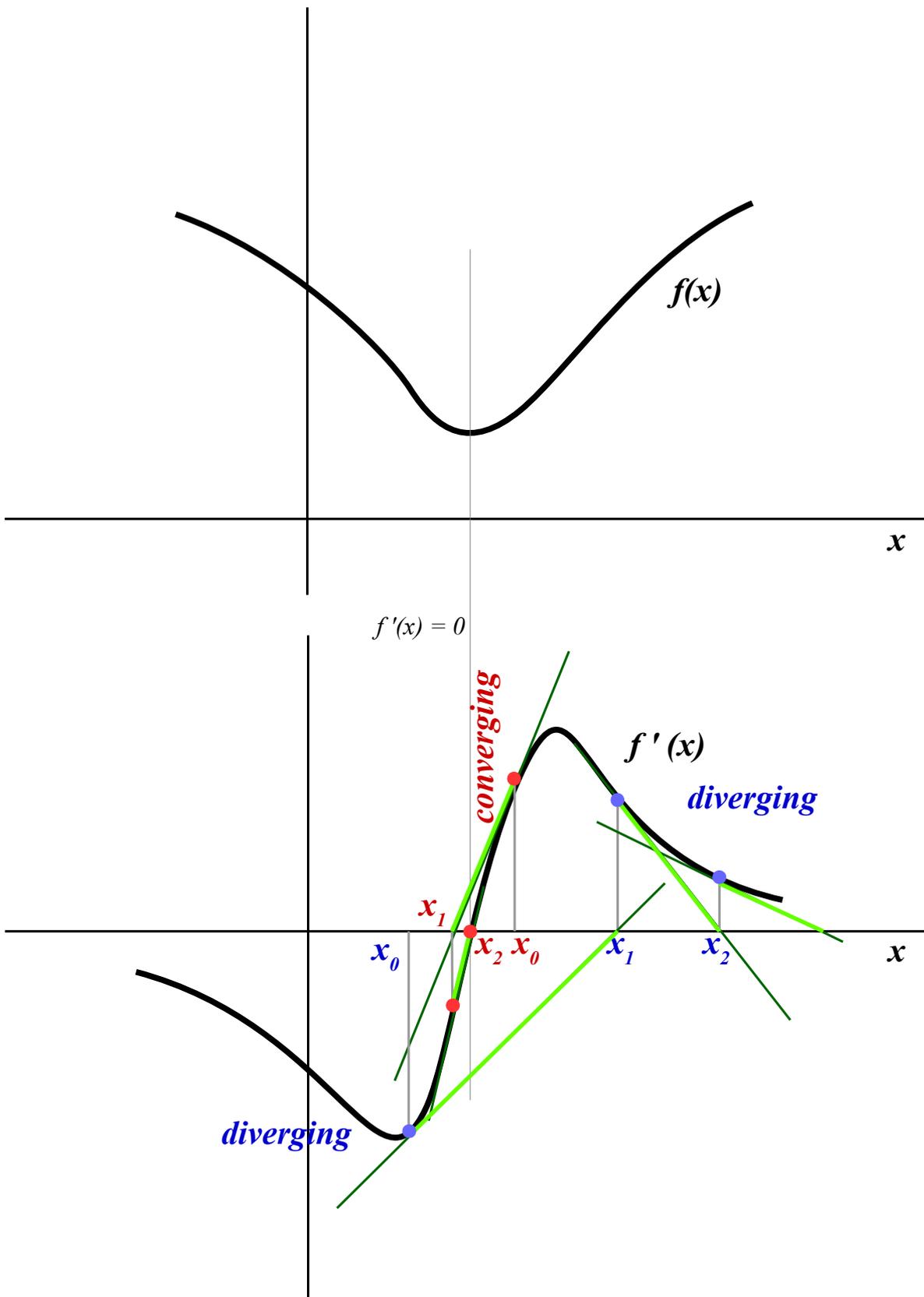


## Finding a Local Minimum with Newton Methods

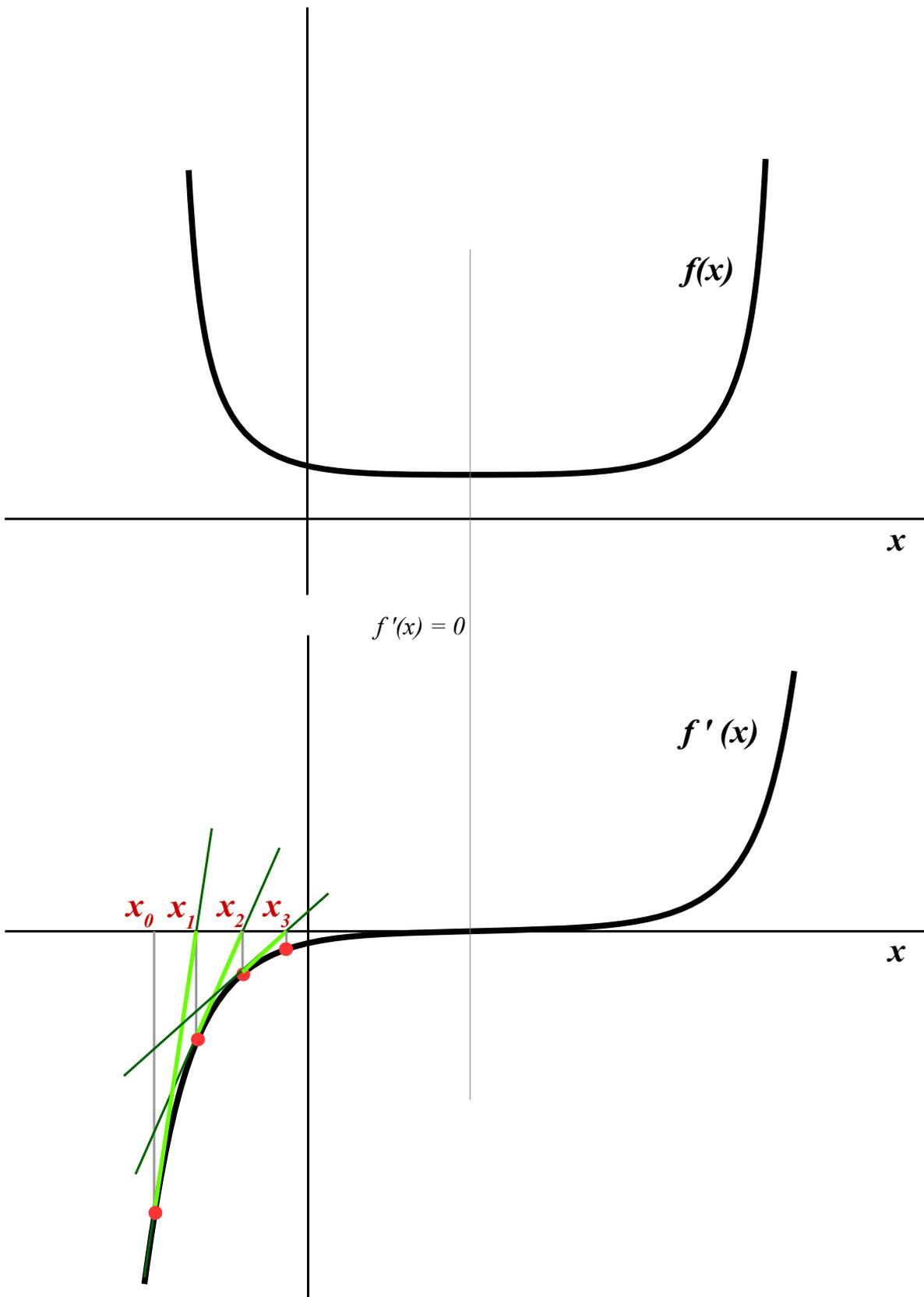
*"Standard" Case: Newton Method Converges Rapidly on Large Interval*



**Case: Newton Method Converges Only Very Locally to Minimum**

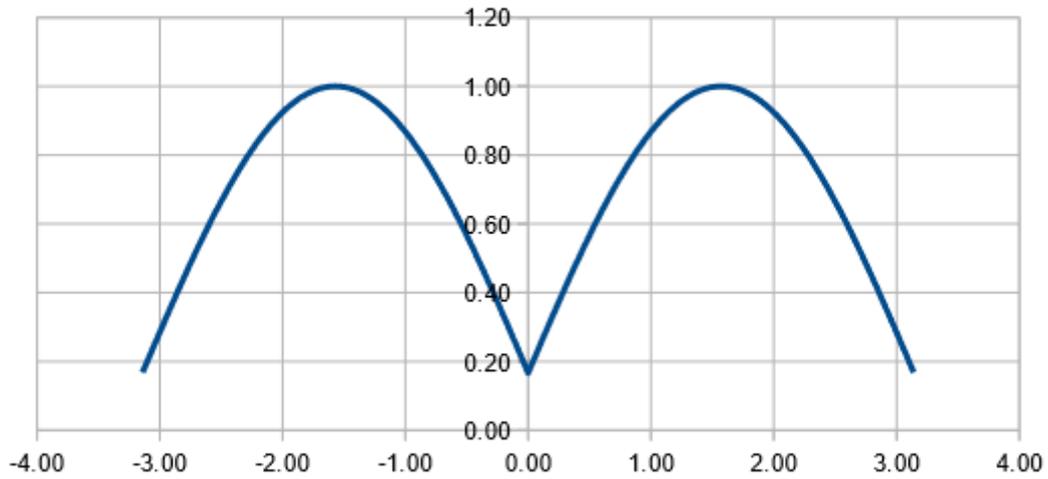


**Case: Newton Method Converges Slowly on Large Interval**



# Converting a Function with Small Converging Domain to a Function with Large Slowly Converging Domain

$$(\text{abs}(\sin(x)) + 0.2) / 1.2$$



$$((\text{abs}(\sin(x)) + 0.2) / 1.2)^m, \text{ for } m = 1, 2, 4, 8, 16, \text{ and } 32$$

