Unit 5: $\frac{d}{dx}f^{-1}(x)$ and applications of the derivative

Vocabulary and notation

$L(x)$ linearization related rates

Skills

- Be able to derive sin/cos/tan of arcsin/arcos/arctan from right triangles
- Be able to compute derivatives of inverse functions to $\sin x, \cos x$ and $\tan x$ from identities such as the one for $\cos(\arcsin x)$
- Know how input/output units of functions and their inverses are related
- Know the units of the derivative of an inverse function
- Use the chain rule to give a proportion between two related rates in a word problem
- Compute tangent line approximations
- Know the statement (hypotheses and conclusions) of the Mean Value Theorem