# Translating

# Example 2.8

Theorem: If $f : \mathbb{R} \to \mathbb{R}$ is continuous on the interval $[a, b]$ and differentiable on $(a, b)$, then there is a number $c \in (a, b)$ for which

$$f'(c) = \frac{f(b) - f(a)}{b - a}$$

# Example 2.9

Conjecture: Every even integer greater than 2 is the sum of two primes.

# Problem 2.3

If $x$ is prime then $\sqrt{x}$ is not rational.

Textbook answer: $P \implies \sim Q$ where $P(x)$ is "$x$ is prime" and $Q(x)$ is "$\sqrt{x}$ is a rational number."

Alternative:

# Problem 2.13

Everything is funny as long as it is happening to someone else.

Textbook answer :

$$\forall x, (\sim M(x) \wedge S(x)) \implies F(x)$$

where $M(x)$ means "$x$ is happening to me", $S(x)$ is "$x$ is happening to someone", $F(x)$ means "$x$ is funny."

Alternative: