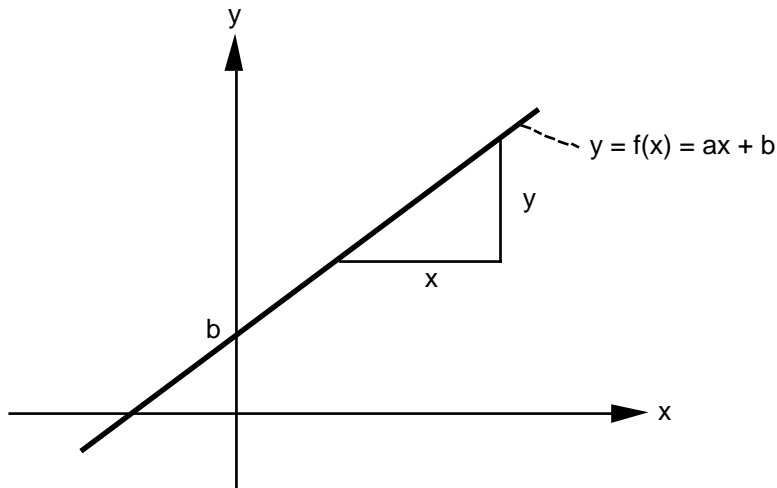


Linear function

Definition

f: D	\mathbb{R}	(D \mathbb{R})
x	$y = f(x) = ax + b$	(a \mathbb{R} , b \mathbb{R})



$a = \frac{y}{x}$: **slope**

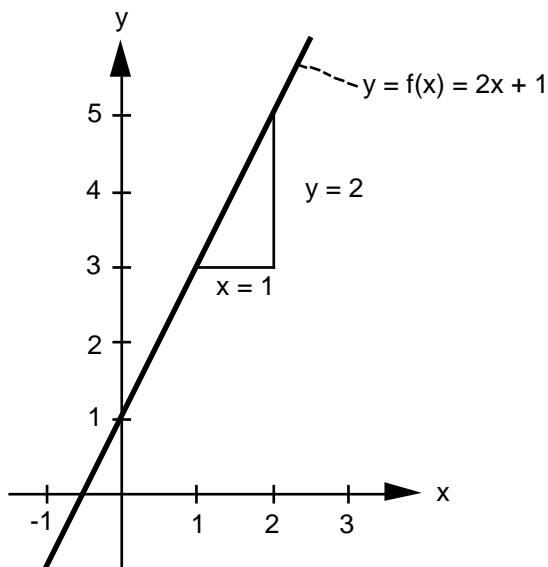
special case $a = 0$: **constant function**

b : **intercept**

special case $b = 0$: **direct proportionality** ("y is directly proportional to x.")

Examples

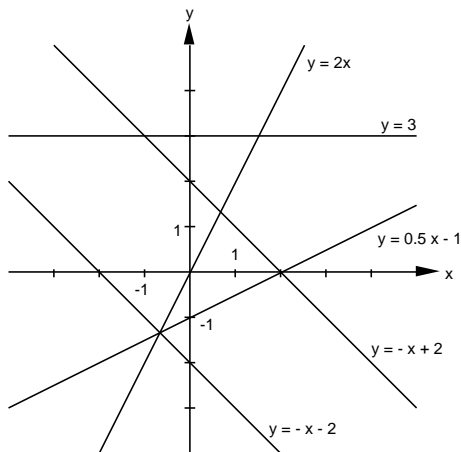
1. f: \mathbb{R} \mathbb{R}
 $y = f(x) = 2x + 1$



Slope $a = \frac{y}{x} = \frac{2}{1} = 2$

Intercept $b = 1$

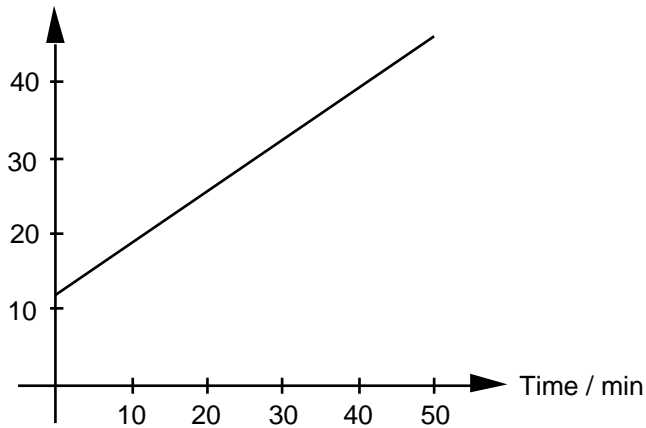
2. Graphs of some linear functions



3. Mobile phone tariff

Monthly fee: 12 CHF basic fee plus 0.70 CHF per minute

Fee / CHF



4. Simple interest

Initial balance = 2000 CHF, interest rate = 2.5%

Balance / CHF

