

### turunan

- $f(x) = k \rightarrow f'(x) = 0$  ( $k = \text{konstanta}$ )
- $f(x) = x \rightarrow f'(x) = 1$
- $f(x) = kx \rightarrow f'(x) = k$
- $f(x) = x^n \rightarrow f'(x) = n \cdot x^{n-1}$
- $f(x) = kx^n \rightarrow f'(x) = k \cdot n \cdot x^{n-1}$
- $f(x) = U + V \rightarrow f'(x) = U' + V'$
- $f(x) = U - V \rightarrow f'(x) = U' - V'$
- $f(x) = U \times V \rightarrow U' \cdot V + U \cdot V'$
- $f(x) = U/V \rightarrow (U' \cdot V - U \cdot V')/V^2$
- $\sqrt{x} = U^n \rightarrow n \cdot U^{n-1} \cdot U'$

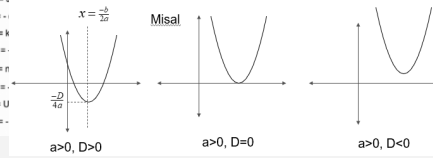
- $f(x) = \sin x \rightarrow f'(x) = \cos$
- $f(x) = \cos x \rightarrow f'(x) = -\sin$
- $f(x) = \tan x \rightarrow f'(x) = \sec^2$
- $f(x) = \cot x \rightarrow f'(x) = -\csc^2$
- $f(x) = \sec x \rightarrow f'(x) = \sec x \cdot \tan x$
- $f(x) = \csc x \rightarrow f'(x) = -\csc x \cdot \cot x$
- $f(x) = \sin kx \rightarrow f'(x) = k \cdot \cos kx$
- $f(x) = \cos kx \rightarrow f'(x) = -k \cdot \sin kx$
- $f(x) = \sin^n x \rightarrow f'(x) = n \cdot \sin^{n-1} x \cdot \cos x$
- $f(x) = \cos^n x \rightarrow f'(x) = -n \cdot \cos^{n-1} x \cdot \sin x$
- $f(x) = \sin U \rightarrow f'(x) = U' \cdot \cos U$
- $f(x) = \cos U \rightarrow f'(x) = -U' \cdot \sin U$

### fungsi kuadrat

#### b. Fungsi Kuadrat

$$f(x) = ax^2 + bx + c$$

Grafik berupa parabola.  $D = b^2 - 4ac$



### pertidaksamaan mutlak

Sifat-sifat nilai mutlak:

1.  $|x| = \sqrt{x^2}$
2.  $|x| \leq a, a \geq 0 \leftrightarrow -a \leq x \leq a$
3.  $|x| \geq a, a \geq 0 \leftrightarrow x \geq a \text{ atau } x \leq -a$
4.  $|x| \leq |y| \leftrightarrow x^2 \leq y^2$
5.  $\left| \frac{x}{y} \right| = \frac{|x|}{|y|}$
6. Ketaksamaan segitiga  
 $|x + y| \leq |x| + |y| \quad |x - y| \geq ||x| - |y||$

### komposisi

$$f \circ g = (Rg \cap Df) \neq \emptyset$$

$$Df \circ g = g^{-1}(Rg \cap Df)$$

$$Rf \circ g = f(Rg \cap Df)$$

it

1.  $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$
2.  $\lim_{x \rightarrow 0} \cos x = 1$
3.  $\lim_{x \rightarrow 0} \frac{\tan x}{x} = 1$