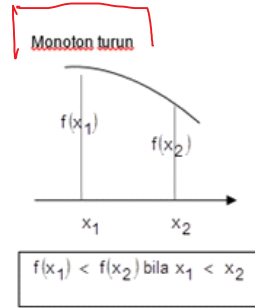
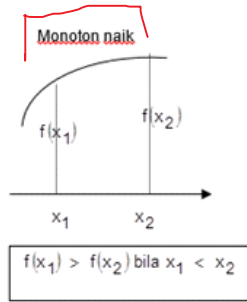


# Kemonotonan

28 September 2015 11:18

$f(x)$  turun, bila  $f'(x) < 0$

Fungsi  $f(x)$  **monoton naik** pada selang / interval I bila  $f'(x) > 0$  untuk  $x \in I$



Fungsi  $f(x)$  **monoton turun** pada selang / interval I bila  $f'(x) < 0$  untuk  $x \in I$

$f(x)$  Naik, bila  $f'(x) > 0$

1.  $f(x) = x^2 - 5x + 6$

2.  $f(x) = 5 + 12x - x^3$

- 3.  $f(x) = x / (x^2 + 2) = \frac{x}{x^2 + 2}$
- 4.  $f(x) = (x - 1) / (x - 2)$
- 5.  $f(x) = 8 / (4 - x^2)$

Tentukan selang shg  $f(x)$  Naik

1)  $f(x) = x^2 - 5x + 6$

$f'(x) = 2x - 5$

Naik,  $f'(x) > 0$

$2x - 5 > 0$

$2x > 5 \rightarrow x > \frac{5}{2}$

Selang shg  $f(x)$  naik adalah  $(\frac{5}{2}, \infty)$

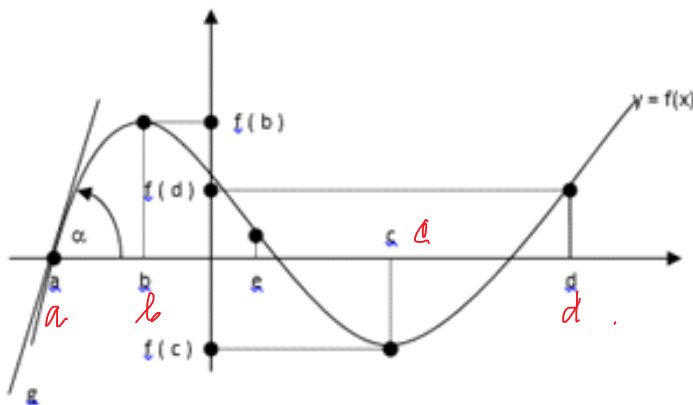
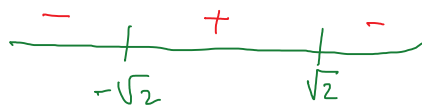
$$f'(x) = \frac{1(x^2 + 2) - 2x \cdot x}{(x^2 + 2)^2}$$

$$= \frac{x^2 + 2 - 2x^2}{(x^2 + 2)^2} = \frac{2 - x^2}{(x^2 + 2)^2}$$

Naik  $\rightarrow f'(x) > 0 \Rightarrow \frac{2 - x^2}{(x^2 + 2)^2} > 0 \rightarrow 2 - x^2 > 0 \rightarrow (\sqrt{2} - x)(\sqrt{2} + x) > 0$

Naik  $\rightarrow (-\sqrt{2}, \sqrt{2})$

Turun  $\rightarrow (-\infty, -\sqrt{2}) \cup (\sqrt{2}, \infty)$



$y = f(x) \rightarrow$  monoton naik pada  $(-\infty, b) \cup (c, \infty)$

$\rightarrow$  monoton turun pada  $(b, c)$