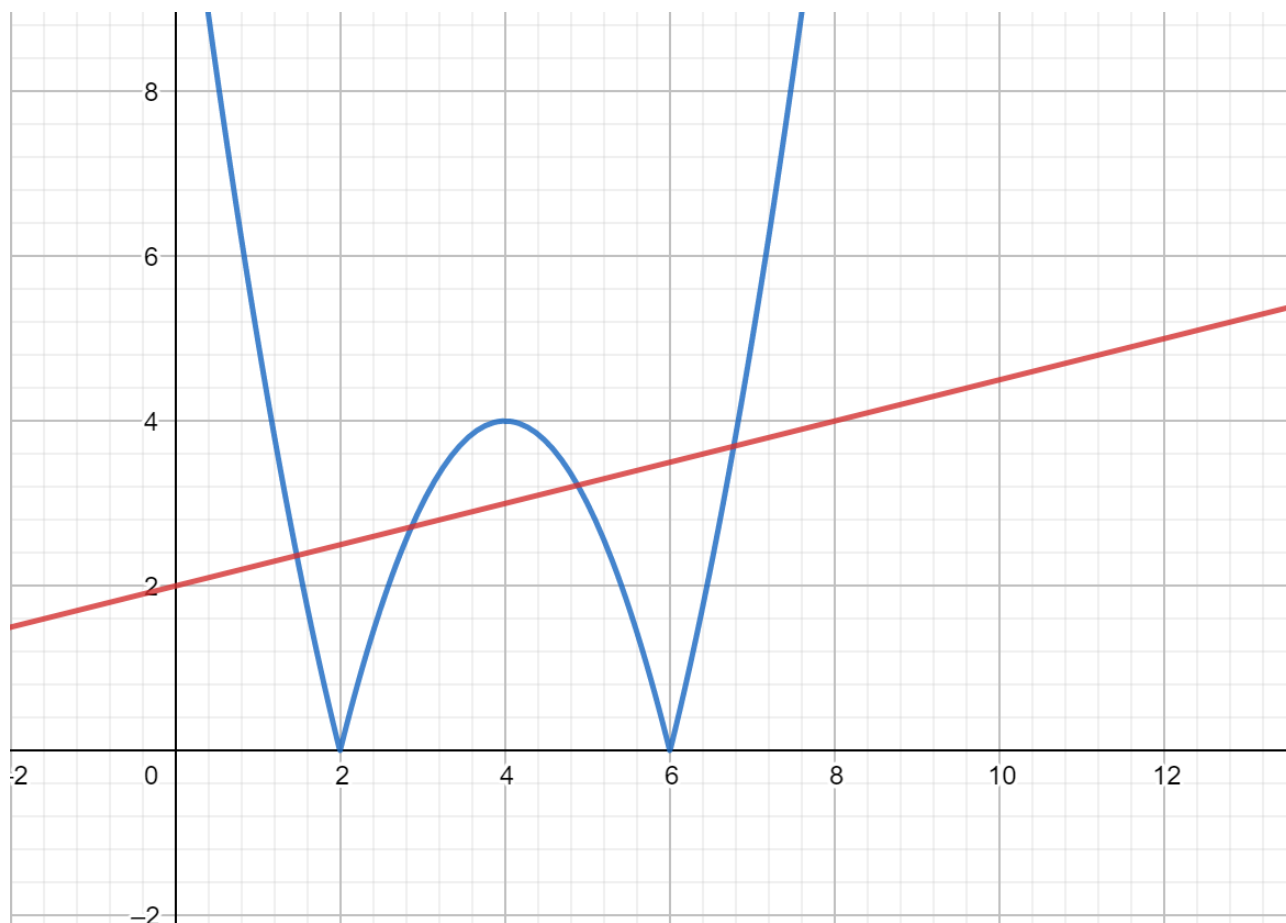


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$$f(x) = \begin{cases} x^2 - 8x + 12 & \text{if } x \leq 2 \\ -x^2 + 8x - 12 & \text{if } 6 > x > 2 \\ x^2 - 8x + 12 & \text{if } x \geq 6 \end{cases}$$

$$|x^2 - 8x + 12| = 0.25x + 2$$

Del formelen ind i to muligheder

$$x^2 - 8x + 12 = 0.25x + 2$$

$$-x^2 + 8x - 12 = 0.25x + 2$$

Første mulighed

$$x^2 - 8x + 12 = 0.25x + 2$$

$$x^2 - 8x + 12 - 0.25x - 2 = 0 \quad \text{Ryk alt til venstre}$$

$$x^2 - 8.25x + 10 = 0 \quad \text{Reducer}$$

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Find koefficienter

$$\begin{aligned}a &= 1 \\b &= -8.25 \\c &= 10\end{aligned}$$

Find diskriminanten

$$\begin{aligned}D &= b^2 - 4ac \\D &= (-8.25)^2 - 4 \cdot 1 \cdot 10 \quad \text{Indsæt tal} \\D &= 28,0625 \quad \text{Udregn}\end{aligned}$$

$$\begin{aligned}x_{1,2} &= \frac{-b \pm \sqrt{D}}{2a} \\x_{1,2} &= \frac{-(-8.25) \pm \sqrt{28.1}}{2 \cdot 1} \quad \text{Indsæt tal}\end{aligned}$$

Adskil til to formler

$$\begin{aligned}x_1 &= \frac{-(-8.25) + \sqrt{28.1}}{2 \cdot 1} \\x_1 &= 6,775472 \quad \text{Udregn} \\x_2 &= \frac{-(-8.25) - \sqrt{28.1}}{2 \cdot 1} \\x_2 &= 1,474528 \quad \text{Udregn}\end{aligned}$$

Anden mulighed

$$\begin{aligned}-x^2 + 8x - 12 &= 0.25x + 2 \\-x^2 + 8x - 12 - 0.25x - 2 &= 0 \quad \text{Alt til venstre} \\-x^2 + 7.75x - 14 &= 0 \quad \text{Reducer}\end{aligned}$$

Koefficienter

$$\begin{aligned}a &= -1 \\b &= 7.75 \\c &= -14\end{aligned}$$

Find diskriminanten

$$\begin{aligned}D &= b^2 - 4ac \\D &= 7.75^2 - 4 \cdot (-1) \cdot (-14) \quad \text{Indsæt tal} \\D &= 4,0625 \quad \text{Udregn}\end{aligned}$$

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$$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$$

$$x_{1,2} = \frac{-7.75 \pm \sqrt{4.1}}{2 \cdot (-1)} \quad \text{Indsæt tal}$$

Adskil til to regnestykker

$$x_1 = \frac{-7.75 + \sqrt{4.1}}{2 \cdot (-1)}$$

$$x_1 = 2,862577 \quad \text{Udregn}$$

$$x_2 = \frac{-7.75 - \sqrt{4.1}}{2 \cdot (-1)}$$

$$x_2 = 4,887423 \quad \text{Udregn}$$