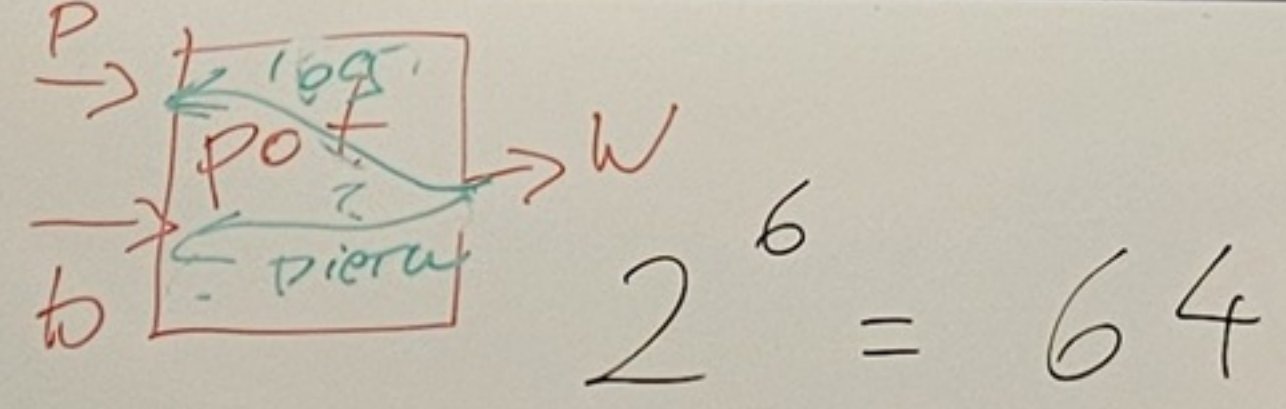


$$b^p = w$$



b - baza
p - potęga
w - wynik

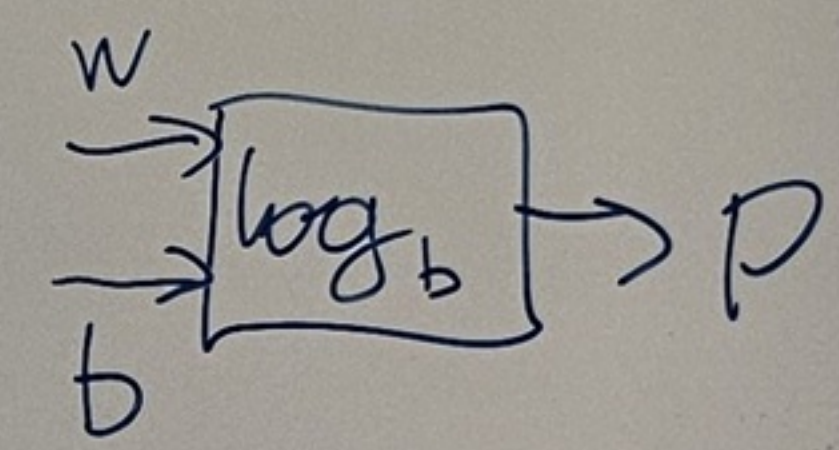
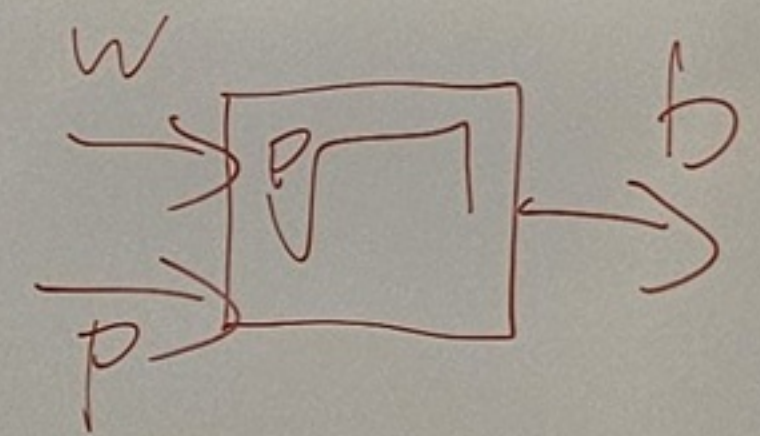
$$\sqrt[p]{w} = b$$

log to odwrot. pot.

$$\log_b w = p$$

$$2^8 = 256$$

$$\log_2 256 = 8$$



Def pot. $\dots b \cdot b \dots \cdot b$ $2^{6+4} = 2^{10} = 2^6 \cdot 2^4$

$$(b^{\frac{1}{2}})^2 = b$$

$$(b^{p_1})^{p_2} = b^{p_1 \cdot p_2}$$

$$b^{\frac{1}{2} \cdot 2} = b$$

$$c^2 = b$$

$$\sqrt[p]{b}$$

$$p \in \mathbb{R}$$

$$b^{p_1 + p_2} = b^{p_1} \cdot b^{p_2}$$

$$(b^{p_1})^{p_2} = b^{p_1 \cdot p_2}$$

$$b^{p_1 - p_2} = \frac{b^{p_1}}{b^{p_2}} \text{ dla } b^{p_2} \neq 0$$

$$(2^6)^4 = 2^{6 \cdot 4}$$

$$\sqrt{2}$$

$$b^1 = b$$

$$b^0 = b^{1-1}$$

$$b^0 = b^1 \cdot b^{-1} \rightarrow 1 = b \cdot \frac{1}{b}$$

$$1 = b^p \cdot p^{-1}$$

$$b^p = b^{0+p}$$

$$b^p = b^0 \cdot b^p$$

$$1 = b^0 \text{ dla } b \neq 0$$

$0^0?$
 x^x
 x^y

$$\log x \cdot y = \log x + \log y$$

$$2^4 = 16$$

$$2^5 = 32$$

$$b^{P_1} = w_1 \quad \ln$$

$$b^{P_2} = w_2 \quad \ln$$

$$\log_b b^P = P$$

$$\log_b w = w$$

$$\log_2(16 \cdot 32)$$

$c = \text{const.}$

$$\log_b(w^c) = \log_b((b^P)^c) =$$

$$= \log_b(b^{Pc}) = c \cdot P = c \cdot \log_b(w)$$

$$\log_2(16 \cdot 32) = \log_2(2^4 \cdot 2^5) =$$

$$= \log_2 16 + \log_2 32$$

$$\log_b(w_1 \cdot w_2) = \log_b(b^{P_1} \cdot b^{P_2}) = \log_b(b^{P_1 + P_2}) =$$

$$P_1 + P_2 = \log_b w_1 + \log_b w_2$$

$$\log_b\left(\frac{w_1}{w_2}\right) = \log_b\left(\frac{b^{P_1}}{b^{P_2}}\right) = \log_b(b^{P_1 - P_2}) =$$

$$= P_1 - P_2 = \log_b w_1 - \log_b w_2$$

