$$a^2 - b^2 = (a - b)(a + b)$$

$$a^2 - ab + ab - b^2$$

$$\frac{1}{\sqrt{2} - 1} \cdot \frac{\sqrt{2} + 1}{\sqrt{2} + 1}$$

$$\frac{\sqrt{2} + 1}{1} = \sqrt{2} + 1$$

$$(a \pm b)^2 = a^2 \pm 2ab + b^2$$

$$\binom{n}{k} = \frac{n!}{k!(n-k)!}$$

$$(a + b)^n = \sum_{k=0}^{n} \binom{n}{k} a^k b^{n-k}$$

$$(x^2 - 2x + 1)^4 = [(x - 1)^2]^4 = (x - 1)^8$$

$$x^8 + (-1)^1 x^7 \binom{8}{1} + (-1)^2 x^6 \binom{8}{2} + \cdots + (-1)^7 \binom{8}{7} x + (-1)^8$$

1
1 1
1 2 1
1 3 3 1

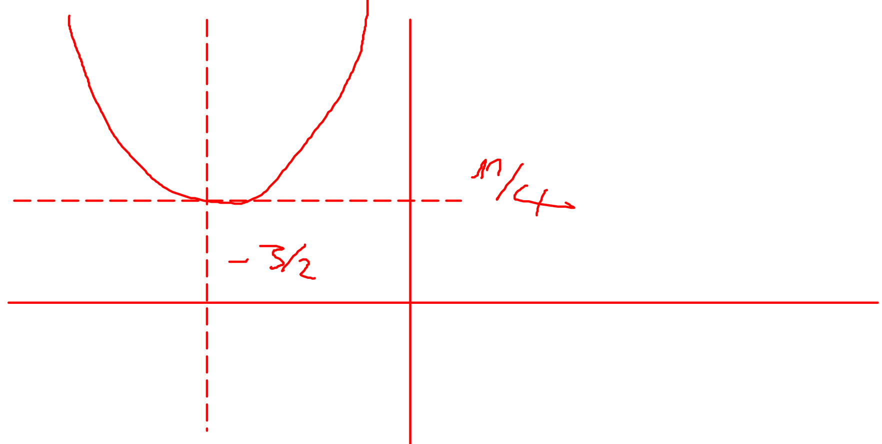
$$\left(x + \frac{3}{2}\right)^2 = x^2 + 3x + \frac{9}{4}$$

$$x^2 + 3x + 5$$

$$\left(x + \frac{3}{2}\right)^2 + \frac{11}{4} = 0$$

$$x^2 + 3x + 5 = \left(x + \frac{3}{2}\right)^2 - \frac{9}{4} + 5 = \left(x + \frac{3}{2}\right)^2 + \frac{11}{4}$$

$$\left(x + \frac{3}{2}\right)^2 = -\frac{11}{4}$$



$$(x+a)^2 = x^2 + 2ax + a^2$$

$$-x^2 + 2x + 2 \qquad -(x^2 - 2x - 2) = -[(x-1)^2 - 3] = 3 - (x-1)^2$$

$$(x-1)^2 = 3 \qquad x - 1 = \pm\sqrt{3}$$

$$\frac{x+3}{x-3} + \frac{x-3}{x+3} - 2 \qquad \frac{(x+3)^2}{(x+3)(x-3)} + \frac{(x-3)^2}{(x+3)(x-3)} - \frac{2(x+3)(x-3)}{(x+3)(x-3)}$$

$$\frac{(x+3)^2 - 2(x+3)(x-3) + (x-3)^2}{x^2-9} \qquad \frac{(x+3-(x-3))^2}{x^2-9} = \frac{36}{x^2-9}$$

$$\sqrt{a+b+2\sqrt{ab}} \cdot \sqrt{a+b-2\sqrt{ab}} = \sqrt{(a+b+2\sqrt{ab})(a+b-2\sqrt{ab})} = \sqrt{(a+b)^2 - 4ab} =$$

$$= \sqrt{a^2+b^2-2ab} = \sqrt{(a-b)^2} = |a-b|$$

$$\left(\sqrt{(1-3)^2} = \sqrt{(-2)^2} = \sqrt{4} = 2 = |1-3|\right)$$

$$\sqrt{-3} \qquad \frac{1}{x^2-1} \qquad \mathbb{R} \setminus \{-1; 1\}$$

$$\sqrt{x^2-1} \qquad (-\infty; -1\rangle \cup \langle 1; +\infty)$$

Sudá: $f(-x) = f(x)$

Lichá: $f(-x) = -f(x)$

2^x

e^x

$\mathrm{e} \approx 2.718281828\ldots$

$$\mathrm{e}^x \mathrm{e}^y = \mathrm{e}^{x+y}$$

$$\mathrm{e}^{-x} = 1/\mathrm{e}^x$$

$$(\mathrm{e}^x)^y = \mathrm{e}^{xy}$$

$$\ln(\mathrm{e}^x) = x = \mathrm{e}^{\ln x}$$

$$2^{x+1} + 2^x = 192$$

$$2^x \cdot 2 + 2^x = 3 \cdot 2^x = 192$$

$$2^x = 64$$

$$x = 6$$

$$\ln(ab) = \ln a + \ln b$$

$$2^{\log_2 x} = \log_2 2^x = x$$

$$\ln(x^\alpha) = \alpha \ln x$$

$$\log_a b = \frac{\ln b}{\ln a} = \frac{\log_c b}{\log_c a}$$

„ $\ln 0 = -\infty$ “