

M2 - Mocniny

Vzorce

$$1. a^r * a^s = a^{r+s}$$

$$2. a^r : a^s = a^{r-s}$$

$$3. (a^r)^s = a^{s*r}$$

$$4. (a * b)^r = a^r * b^r$$

$$5. \left(\frac{a}{b}\right)^r = \left(\frac{a^r}{b^r}\right)$$

$$\cos 2x = \cos^2 x - \sin^2 x$$

$$\sin 2x = 2 \cos x \sin x$$

$$a^{-n} = \frac{1}{a^n}$$

$$a^0 = 1$$

$$a^{\frac{m}{n}} = \sqrt[n]{a^m}$$

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

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

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

$$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$$

$$(a + b)^4 = a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4$$

Pascalův trojúhelník

$$\begin{array}{ccccccc}
 & & & & 1 & & \\
 & & & 1 & & 1 & \\
 & & 1 & & 2 & & 1 \\
 & 1 & & 3 & & 3 & & 1 \\
 1 & & 1 & & 4 & & 6 & & 4 & & 1 \\
 & 1 & & 5 & & 10 & & 10 & & 5 & & 1 \\
 1 & & 1 & & 6 & & 15 & & 20 & & 15 & & 6 & & 1
 \end{array}$$

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

$$\binom{7}{4} = \frac{7 * 6 * 5 * 4}{4 * 3 * 2 * 1} = \frac{7 * 6 * 5}{3 * 2 * 1} = \binom{7}{3}$$