

**Potencije:**

$$a^n \cdot a^m = a^{n+m}, \quad a^n : a^m = a^{n-m} \quad (a \neq 0),$$

$$a^{-m} = \frac{1}{a^m} \quad (a \neq 0)$$

$$(a^x)^y = a^{x \cdot y}$$

$$a^x \cdot b^x = (ab)^x \quad a^x : b^x = \left(\frac{a}{b}\right)^x$$

$$a^0 = 1$$

**Potencije binoma:**

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

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

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

$$a^3 \pm b^3 = (a \pm b)(a^2 \mp ab + b^2)$$

**Geometrija:**

$$\text{Površina trokuta: } P = \frac{a \cdot v_a}{2}, P = \sqrt{s \cdot (s - a) \cdot (s - b) \cdot (s - c)}, s = \frac{a+b+c}{2}$$

$$P = \frac{abc}{4r_o} \quad P = r_u s$$

$$\text{Jednakostraničan trokut:} \quad P = \frac{a^2 \sqrt{3}}{4} \quad v = \frac{a \sqrt{3}}{2} \quad r_o = \frac{2}{3} v \quad r_u = \frac{1}{3} v$$

$$\text{Površina paralelograma: } P = av$$

$$\text{Površina trapeza: } P = \frac{a+c}{2} v$$

$$\text{Površina kruga: } P = r^2 \pi$$

$$\text{Opseg kruga: } O = 2r\pi$$

$$\text{Površina kružnog isječka: } P = \frac{r^2 \pi \alpha}{360}$$

$$\text{Duljina kružnog luka: } l = \frac{r \pi \alpha}{180}$$


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**Analitička geometrija:**

$$\text{Udaljenost točaka } T_1, T_2: \quad d(T_1, T_2) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\text{Polovište dužine } \overline{T_1 T_2}: \quad P\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

$$\text{Površina trokuta:} \quad P = \frac{1}{2} |x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)|$$

$$\text{Jednadžba pravca:} \quad y - y_1 = k(x - x_1), \quad k = \frac{y_2 - y_1}{x_2 - x_1}$$


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