

2. Základní rovnice

Ekvivalentní úpravy

Ze vzorců vyjádřete neznámé veličiny v závorce:

- 1) $s = vt$; (v, t)
- 2) $\rho = \frac{m}{V}$; (m, V)
- 3) $o = 2\pi r$; (r)
- 4) $V = abc$; (a, b, c)
- 5) $S = 2(ab + bc + ac)$; (a, b, c)
- 6) $S = \frac{1}{2}ef$; (e, f)
- 7) $S = \frac{av_a}{2}$; (a, v_a)
- 8) $S = \frac{(a+c)v}{2}$; (a, c, v)
- 9) $\frac{a}{\sin \alpha} = \frac{b}{\sin \beta}$; $(a, b, \sin \alpha, \sin \beta)$
- 10) $a^2 + b^2 = c^2$; (a, b, c)
- 11) $c^2 = a^2 + b^2 - 2ab \cos \gamma$; $(\cos \gamma)$
- 12) $V = \frac{1}{6}\pi v(3r_1^2 + v^2)$; (r_1, π)
- 13) $S = (\pi r_1^2 + \pi r_2^2 + \pi s r_1 + \pi s r_2)$; (s, π)

Výsledky:

- 1) $v = \frac{s}{t}, t = \frac{s}{v}$
- 2) $V = \frac{m}{\rho}, m = \rho \cdot V$
- 3) $r = \frac{o}{2\pi}$
- 4) $a = \frac{V}{bc}$, $(b, c \text{ analogicky})$
- 5) $a = \left(\frac{1}{2}S - bc\right) : (b + c)$, $(b, c \text{ analogicky})$
- 6) $e = \frac{2S}{f}, f = \frac{2S}{e}$
- 7) $a = \frac{2S}{v_a}, v_a = \frac{2S}{a}$
- 8) $v = \frac{2S}{a+c}, a = \frac{2S}{v} - c, c = \frac{2S}{v} - a$
- 9) $a = \frac{b \sin \alpha}{\sin \beta}, b = \frac{a \sin \beta}{\sin \alpha}, \sin \alpha = \frac{a \sin \beta}{b}, \sin \beta = \frac{b \sin \alpha}{a}$
- 10) $c = \sqrt{a^2 + b^2}, a = \sqrt{c^2 - b^2}, b = \sqrt{c^2 - a^2}$
- 11) $\cos \gamma = \frac{c^2 - a^2 - b^2}{-2ab}$
- 12) $\pi = \frac{6V}{v(3r_1^2 + v^2)}, r_1 = \sqrt{\left(\frac{6V}{\pi v} - v^2\right) : 3}$
- 13) $s = \frac{S - \pi r_1^2 - \pi r_2^2}{\pi r_1 + \pi r_2}, \pi = S : (r_1^2 + r_2^2 + s r_1 + s r_2)$