5.5 Vyjádření neznámé ze vzorce 97-104

d) $\frac{x+0,5}{4+x}$; $x \neq \pm 4$. **97.** a) $v = \frac{s}{t}$, $t = \frac{s}{v}$; b) $a = \frac{u\sqrt{2}}{2}$; c) $a = \frac{v}{t}$, $t = \frac{v}{a}$; d) $f = \frac{v}{2\pi r}$, $r = \frac{v}{2\pi f}$. **98.** a) $r = \frac{Q}{\pi s}$, $s = \frac{Q}{\pi r}$; b) $r = \frac{S}{2\pi v}$, $v = \frac{S}{2\pi r}$; c) $m = \frac{W}{gh}$, $h = \frac{W}{mg}$; d) $U = \frac{P}{I\sqrt{3}\cos\varphi}$, $I = \frac{P}{U\sqrt{3}\cos\varphi}$, $\cos\varphi = \frac{P}{UI\sqrt{3}}$. **99.** a) $m = \varrho V$, $V = \frac{m}{\varrho}$; b) $a = c\sin\alpha$, $c = \frac{a}{\sin\alpha}$; c) $a = \frac{2v\sqrt{3}}{3}$; d) $a = b\,\mathrm{tg}\,\alpha$, $b = \frac{a}{\mathrm{tg}\,\alpha}$; e) $m = k\cos\delta$, $k = \frac{m}{\cos\delta}$; f) $d = \frac{60v}{\pi n}$, $n = \frac{60v}{\pi d}$; g) $a = \frac{2S}{v_a}$, $v_a = \frac{2S}{a}$; h) $\varepsilon = \frac{4\pi dC}{S}$, $S = \frac{4\pi dC}{\varepsilon}$, $d = \frac{\varepsilon S}{4\pi C}$. **100.** a) $d_1 = \frac{d_2 n_2}{n_1}$, $d_2 = \frac{d_1 n_1}{n_2}$, $n_1 = \frac{d_2 n_2}{d_1}$, $n_2 = \frac{d_1 n_1}{d_2}$; b) $z_1 = \frac{r_1 z_2}{r_2}$, $z_2 = \frac{z_1 r_2}{r_1}$, $r_1 = \frac{z_1 r_2}{z_2}$, $r_2 = \frac{z_2 r_1}{z_1}$; c) $F_1 = \frac{a_2 F_2}{a_1}$, $F_2 = \frac{a_1 F_1}{a_2}$, $a_1 = \frac{a_2 F_2}{F_1}$, $a_2 = \frac{a_1 F_1}{F_2}$; d) $F_1 = \frac{S_1 F_2}{S_2}$, $F_2 = \frac{S_2 F_1}{S_1}$, $S_1 = \frac{S_2 F_1}{F_2}$, $S_2 = \frac{S_1 F_2}{F_1}$. **101.** a) $a = \sqrt[3]{V}$; b) $a = \sqrt{\frac{S}{6}}$; c) $r = \sqrt{\frac{S}{4\pi}}$; d) $d = 2\sqrt{\frac{S}{\pi}}$; e) $U = \sqrt{RP}$, $R = \frac{U^2}{P}$; f) $r = \sqrt[3]{\frac{3v}{4\pi}}$; g) $t = \sqrt{\frac{2s}{g}}$; h) $m = \frac{F_0 r}{v^2}$, $v = \sqrt{\frac{F_0 r}{m}}$, $r = \frac{mv^2}{F_0}$. **102.** a) $h = \frac{v^2}{2g}$; b) $l = \frac{\tau^2 g}{\pi^2}$, $g = \frac{\pi^2 l}{\tau^2}$; c) $l = \frac{T^2 g}{4\pi^2}$, $g = \frac{4\pi^2 l}{T^2}$; d) $v = l\sqrt{\frac{g}{2h}}$, $h = \frac{l^2 g}{2v^2}$. **103.** a) $R_1 = R - R_2$; $R_2 = R - R_1$; b) $C_2 = C - C_1 - C_3$; c) $a = \frac{o}{2} - b$; $b = \frac{o}{2} - a$; d) $a = \frac{2S}{v} - c$; $c = \frac{2S}{v} - a$; $v = \frac{2S}{a+c}$; e) $v_0 = v - at$; $a = \frac{v - v_0}{t}$; $t = \frac{v - v_0}{a}$; f) $k = \frac{y-q}{x}$; $x = \frac{y-q}{k}$; $q = y - kx$. **104.** a) $r = \sqrt{R^2 - \frac{S}{\pi}}$, $R = \sqrt{\frac{S}{\pi} + r^2}$; b) $R = \frac{R_1 R_2}{R_1 + R_2}$, $R_1 = \frac{R \cdot R_2}{R_2 - R}$, $R_2 = \frac{R \cdot R_1}{R_1 - R}$; c) $f = \frac{aa'}{a' + a}$, $a = \frac{fa'}{a' - f}$, $a' = \frac{fa}{a - f}$; d) $d = \sqrt[3]{D^3 - \frac{6V}{\pi}}$, $D = \sqrt[3]{d^3 + \frac{6V}{\pi}}$. **105.** a) $l = \frac{R\pi d^2}{4\varrho}$, $d = 2\sqrt{\frac{\varrho l}{\pi R}}$; b) $v = \frac{Q}{\pi r^2}$, $r = \sqrt{\frac{Q}{\pi v}}$;