15. GRAWITACJA - odpowiedzi

15.6. $T = \sqrt{\frac{3\pi n}{G(n-1)\rho}}$

15.7. $h = R$

15.8. $h = \sqrt[3]{\frac{gR_Z^2T^2}{4\pi}} - R_Z$

15.9. $v_1 = \sqrt{\frac{GM}{R}}; v_2 = \sqrt{\frac{2GM}{R}};$

15.10. $\frac{v_{1Z}}{v_{1K}} = \sqrt{\frac{R_K}{R_Z}}$

15.11. $h = \sqrt[3]{\frac{GMT^2}{4\pi^2}} - R$

15.12. $g_h = \frac{4G\pi\rho(R_Z-h)}{3};\ x = 0{,}7R_Z$

15.13. $v = \sqrt{\frac{GM}{R}} = v_1$

15.14. wewnątrz: $E_g = \frac{4}{3}G\rho\pi x;$ na zewnątrz: $E_g = \frac{4}{3}G\rho\pi\frac{R^3}{x^2}$

15.15. $L = m\sqrt{2GM\frac{R_1R_2}{R_1+R_2}}$

15.16. $v_{przy} = \frac{h}{l}v_{od}$

15.18. $W = -Gm\left(\frac{M_K}{r_0} + \frac{M_Z}{H-r_0} - \frac{M_K}{R_K} - \frac{M_Z}{H-R_K}\right);\ gdzie\ r_0 = \frac{\sqrt{M_KM_Z}-M_K}{M_Z-M_K}H$

15.19. $F = 2G\frac{Mm}{\pi R^2};\quad E = 2G\frac{M}{\pi R^2}$

15.20. a) $F = \frac{2GmM}{R^2}\left(1 - \frac{h}{\sqrt{R^2+h^2}}\right);$ b) $F = \frac{2GmM}{R^2}$