

m - $m = M - 5 + 5 \lg r$, $M -$, $r -$, $r:$

$$r = 10^{0.2*(m-M+5)}$$

4. $9,12 * 10^6$, $9,12$, $0,07/0,00508$ $13,8$

$2,1$ $(2,1 * 10^9)$, $13,8*150 = 2070$

5. II :

$$\frac{mv^2}{R} = G \frac{Mm}{R^2} \quad (1)$$

$m -$, $R -$, $v = \sqrt{\frac{GM}{R}}$

$$\frac{v_1}{v_2} = \sqrt{\frac{R_2}{R_1}}$$

$$R_2 = 2R_1, \quad \frac{v_1}{v_2} = \sqrt{2} \approx 1,41.$$

$$v = \frac{2fR}{T}, \quad (1) \quad : 4f^2 R^3 = GMT^2$$

$$\frac{R_2^3}{R_1^3} = \frac{T_2^2}{T_1^2}$$

III

$$R_2 = 2R_1, \quad \frac{T_2}{T_1} = \sqrt{8} \approx 2,83.$$

6. $(0,2+1,8)/2=1,0$ III

$- 365,25$