

1. :
 , , 23 56 .
 , 23 59

2. :

$$\frac{4f}{3} R_{\oplus}^3 = \frac{f}{3} d^2 r,$$

d - , r - ($r=778,3$. - $149,6$.).

$$d = \sqrt{\frac{16R_{\oplus}^3}{3r}}.$$

45 . " " , :

3. ,
 $m^{\wedge 2} = GM_{\oplus}m / R_{\oplus} \approx 436 \cdot 10^7 \approx \frac{436 \cdot 10^7}{3600} \approx 1200$. ,
 / -) , m - (3,382
 : ≈ 4100 .

4.

$$E_m = \frac{\wedge^2}{2} - \frac{GM}{R}$$

, (M —) .
 1 . . (29.8 / , 42.1 / .
 12.3 71.9 / .

5.

$$L_0 = 4 R^2 T_0^4,$$

- , R - , T_0 -
 , 6000 K. $T=4200$ K

$$L = 2 R^2(T_0^4 + T^4).$$

$$(L_0/L) = 1.61 \quad .$$

6.

,
1 . . . 0,5'', , 0,5'', 2 ,
20 ,
20 . ./ . ,
95 /c.