10

1.

.   ,   ,   -

.   .

2.

2R   . F $= G \cdot \dfrac{m^2}{(2R)^2}$

, $F = \dfrac{mV^2}{R}$

$R = \sqrt[3]{\dfrac{GmT}{16f^2}} = 3 \cdot 10^6$,   ,

3.

,

22   .   ♋ -   .

$\delta\odot = +23°$.

(   )   .

22

$h = 90° - \varphi + \delta = 57°$

$- \varphi = 56°$.

22   .   .

e_T -   -

$\delta\odot = -23°26'$.   11°.

4.

$F = G\dfrac{mM}{(R+H)^2}$ -   , $F = \dfrac{V^2 m}{R+H}$

$$G\dfrac{mM}{(R+H)^2} = \dfrac{V^2 m}{R+H}$$

$$= 2f\sqrt{\dfrac{R}{g}\left(1+\dfrac{H}{R}\right)^3} = 7200 \quad \cong 2$$

5.

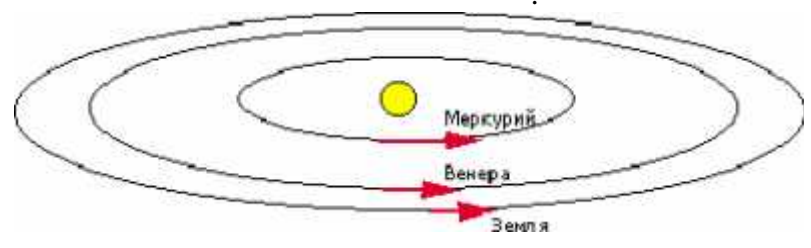(M)   (m).   ,

(E):

$$MV + mv = 0 \qquad -$$

$$\frac{1}{2}MV^2 + \frac{1}{2}mV^2 = E \qquad -$$

$$V^2 = 2E/(M+m),$$

, - . α -
. L

$$= \frac{2V^2_o \sin\Gamma \cos\Gamma}{g}$$

,
α   v
g. , 6 ,
(- !)
5. – , - ,
27- .

6.

.

,
,
, - . , -
(7.0
3.4),
,
.

3,4 ,
,
.
- .
- .
76,7 .
(21) ( ),

(76,7 °· 365)/360° = 78 .

:

21 + 78 = 7 .

, , , ( )
1-2 ,
2-3
(0,5° / sin 3,4° = 8,4°; 5).
,
- .

3