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2.

$$Q_{1=28^{\circ}}$$

$$Q = a \cdot \sin 1,$$

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$$q_{2=18^{\circ}}$$

$$q = a \cdot \sin 2.$$

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$$e = \frac{Q - q}{Q + q},$$

$$e = \frac{\sin \{1 - \sin \{2}{\sin \{1 + \sin \{2}$$

$$e = 0,206.$$

3. III ()

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$$\frac{a^3}{T_1^2} = \frac{GM_0}{10 * 4f^2}.$$

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$$\frac{a^3}{T^2} = \frac{GM_0}{4f^2},$$

$$= 1 \quad a_1 = \sqrt{10} = 3,162$$

4.

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r

$$\frac{mV^2}{r} = G \frac{mM}{r^2}$$

$$V = \frac{2\pi r}{T}$$

$$M = \frac{4}{3}\pi r^3 \rho$$

$$\frac{4\pi^2 r^3}{T^2} = G \frac{4}{3}\pi r^3 \rho$$

$$r = \sqrt[3]{\frac{G T^2}{3\pi}}$$

$$= 900 \text{ km}^3$$

$$r = 45,3 \text{ km}$$

5. 1.

$$r_0 = 656,3 \text{ km} = 6,563 \times 10^5 \text{ m}$$

2.

$$V_r = \frac{\Delta \lambda}{\lambda_0} c$$

3.

$$r = \frac{V_r}{H}$$

$$V_r = 32122 \text{ km/s}, r = 428,3 \text{ km}$$

4.

$$D = r \times \text{tg}(\alpha), \quad \alpha = 8''$$

$$D = 16,6 \text{ km}$$

6.

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