

DRŽAVNO NATJECANJE IZ ASTRONOMIJE 2018. GODINE
6. RAZRED
TOČNI ODGOVORI

ZADACI

8	
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1. zadatak

Točan odgovor;

- | | |
|---|--------|
| a) $n = m_N - m_S$ | 1 bod |
| $n = 8 - 2 = 6$ | 1 bod |
| Razlika od jedne prividne magnitude odgovara razlici u sjaju od 2,512 | 2 boda |
| $n = 2,512 \times 2,512 \times 2,512 \times 2,512 \times 2,512 \times 2,512 = 251,26$ | 2 boda |
| b) Nebeski objekti se vide do šeste prividne magnitude . | 2 boda |

2. zadatak

Točan odgovor;

a)

$$75^{\circ}:15^{\circ}=5 \text{ h} \quad 1 \text{ bod}$$

Idemo prema zapadu pa oduzimamo vrijeme. 1 bod

$$12\text{h}-5\text{h}=7\text{h} \quad 1 \text{ bod}$$

U New Yorku je 7 sati . 1 bod

b)

$$140^{\circ}:15^{\circ}=9\text{h} \quad 1 \text{ bod}$$

 5° - ostatak 1 bod

$$5^{\circ}\cdot 4 \text{ min} = 20 \text{ min} \quad 1 \text{ bod}$$

Idemo prema istoku pa dodajemo vrijeme. 1 bod

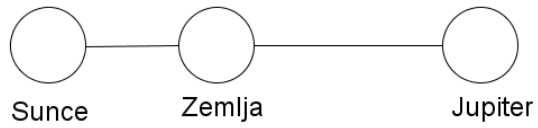
$$12\text{h}+9\text{h i } 20 \text{ min}=21\text{h i } 20 \text{ min} \quad 1 \text{ bod}$$

U Tokiju je 21 sat i 20 min . 1 bod

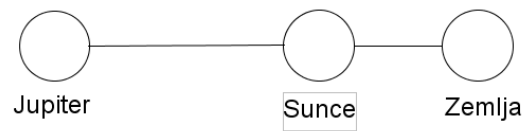
3. zadatak

Točan odgovor :

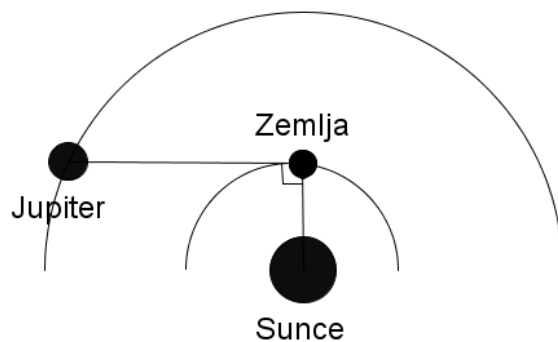
a) skica : 3 boda



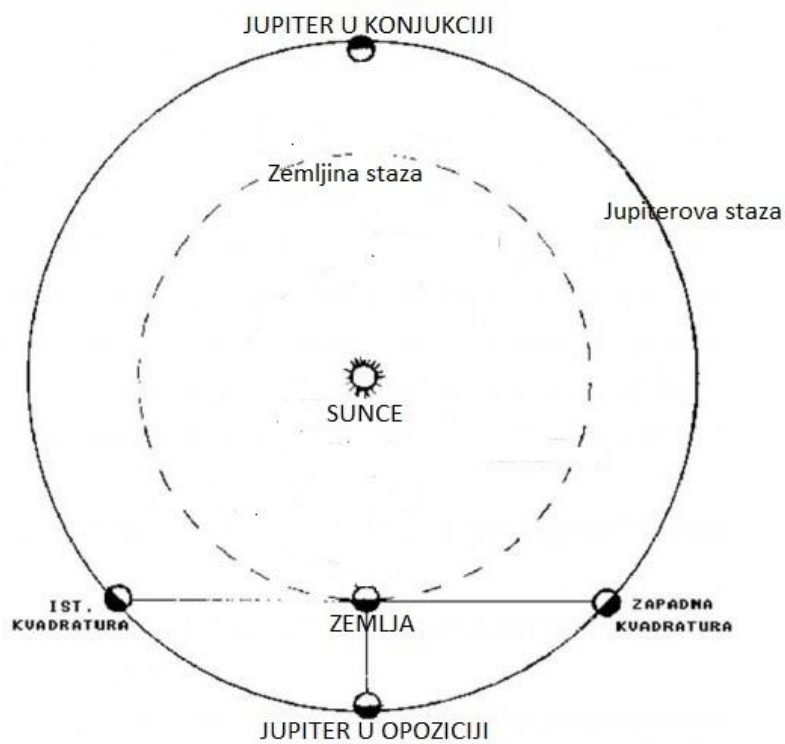
b) skica : 3 boda



c) skica : 3 boda



Kao točan odgovor u pitanjima 3a i 3b treba priznati i prikaze konjukcije i opozicije sa nacrtanim stazama planeta oko Sunca.



Točan odgovor; d) zadatak

$d = d_J - d_Z$	1 bod
$d = 778\,340\,000 \text{ km} - 149\,600\,000 \text{ km}$	1 bod
$d = 628\,740\,000 \text{ km}$	1 bod
$d = 628\,740\,000 \text{ km} / 149\,600\,000 \text{ km}$	1 bod
$d = 4.2 \text{ aj}$	1 bod

druga mogućnost

$d = d_J / 1aj$ 1 bod

$d = 778\,340\,000 \text{ km} / 149\,600\,000 \text{ km}$ 1 bod

$d = 5.2 aj$ 1 bod

$d = 5.2 aj - 1 aj$ 1 bod

$d = 4.2 aj$ 1 bod

e) zadatak

$d = d_J + d_Z$ 1 bod

$d = 778\,340\,000 \text{ km} + 149\,600\,000 \text{ km}$ 1 bod

$d = 927\,940\,000 \text{ km}$ 1 bod

$d = 927\,940\,000 \text{ km} / 149\,600\,000 \text{ km}$ 1 bod

$d = 6.2 aj$ 1 bod

druga mogućnost

$d = d_J / 1aj$ 1 bod

$d = 778\,340\,000 \text{ km} / 149\,600\,000 \text{ km}$ 1 bod

$d = 5.2 aj$ 1 bod

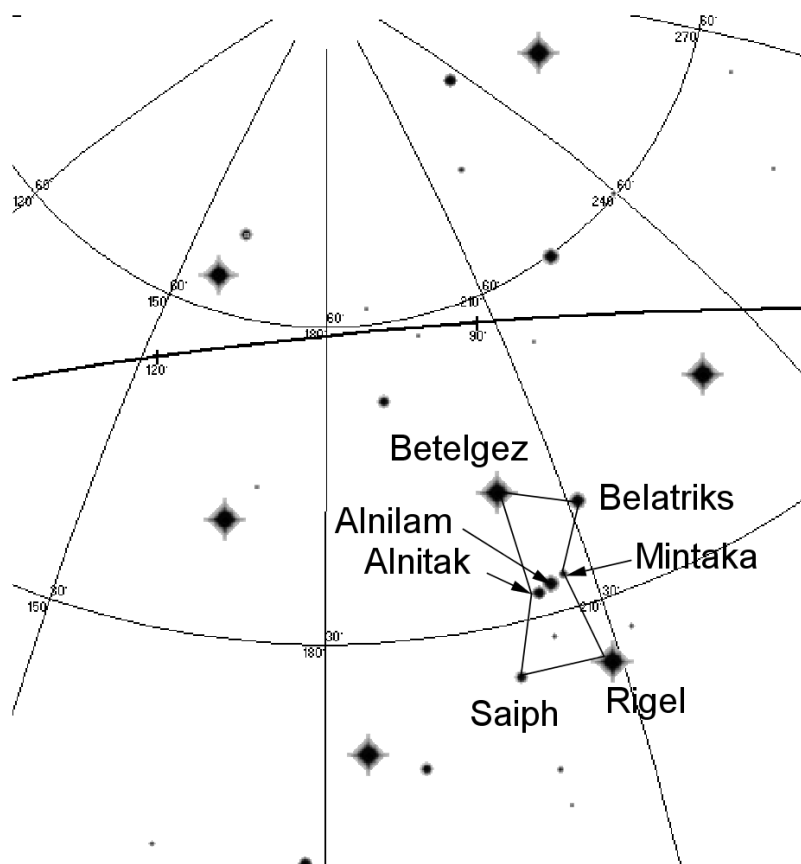
$d = 5.2 aj + 1 aj$ 1 bod

$d = 6.2 aj$ 1 bod

Priznati i alternativne načine izračunavanja .

4. zadatak

Točan odgovor : Točno nacrtamo zvijezde 5 bodova , svaka točno ucrtana zvijezda 1 bod (ukupno 4 boda) zvijezde : Betelgeuse, Mintaka, Bellatrix, Alnilam, Alnitak, Saiph, Rigel.



- b) Internacionalna oznaka zvijezda je Ori. 1 bod
- c) Naziv najpoznatije tamne maglice u zvijezdu Orion je Konjska glava. 1 bod
- d) Koliko sjajnih zvijezda čini Orionov pojas? 3. 1 bod
- e) Koji je drugi naziv za Orionov pojas ? Kosci . 1 bod