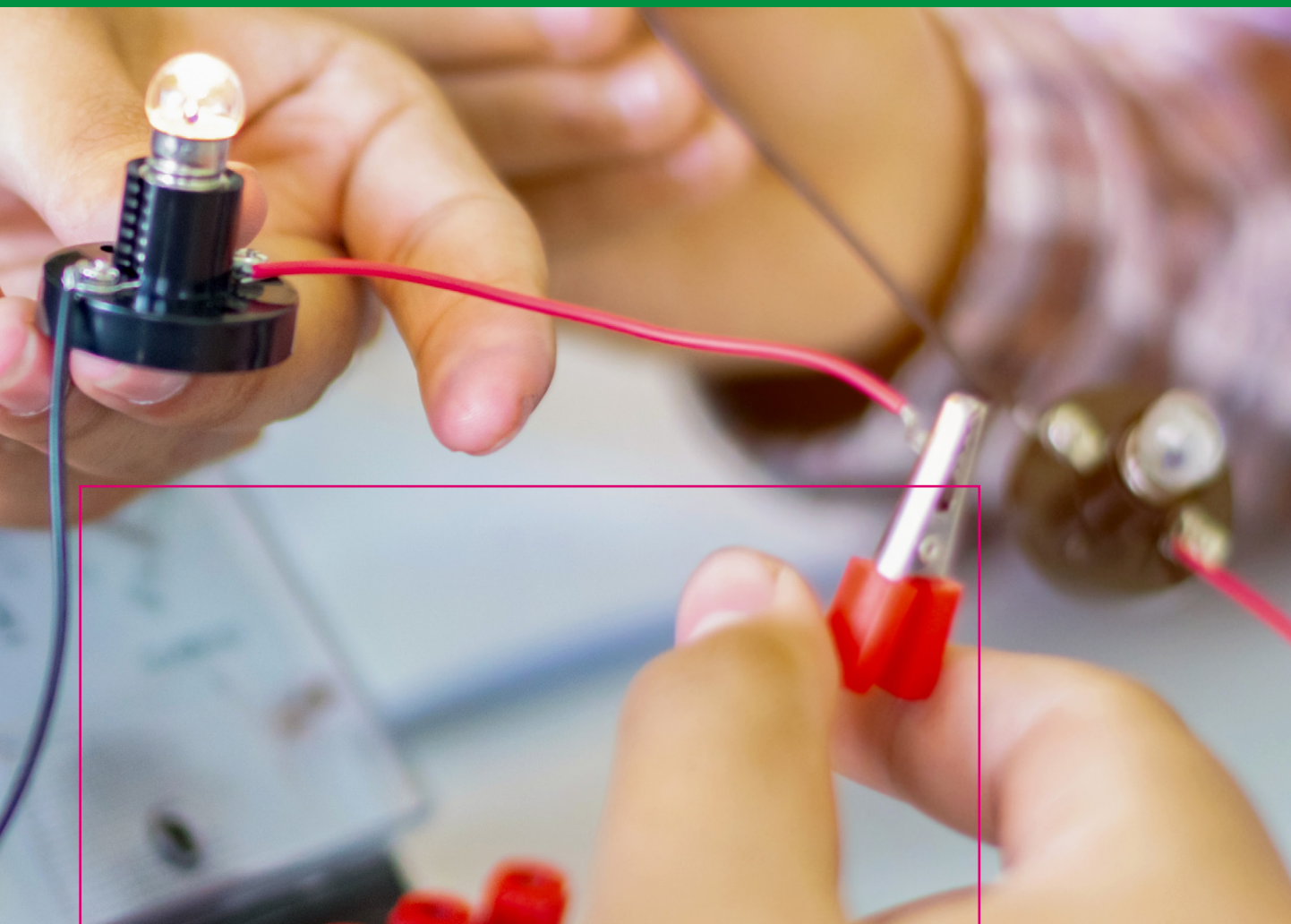


RJEŠENJA



B. Đerek

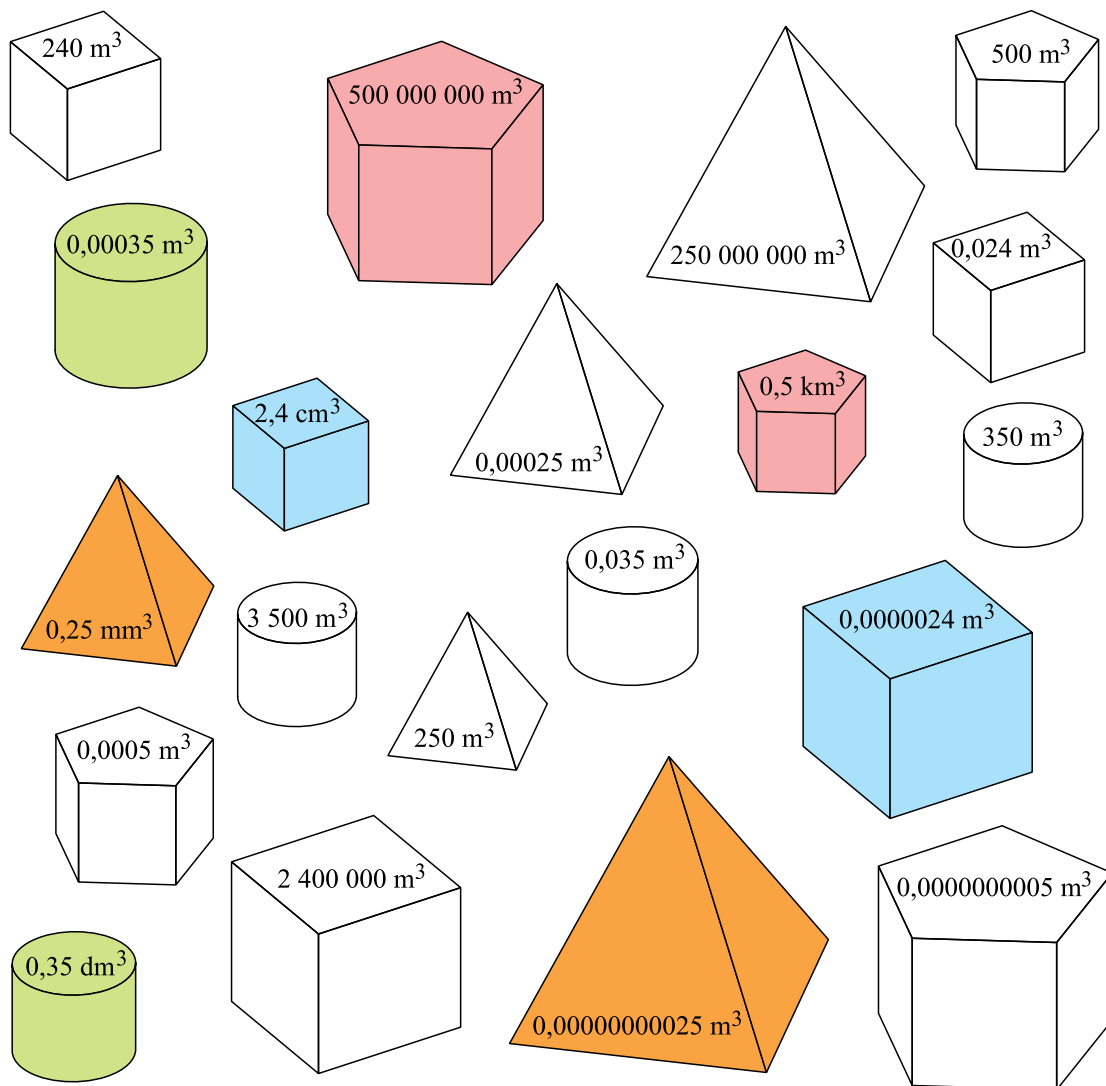
PRIPREMA, POZOR, FIZIKA

ispiti znanja za 8. razred osnovne škole



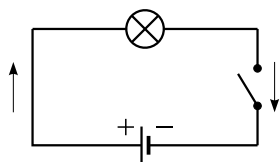
1. a) 55,035 b) 0,724 c) 0,0385 d) 30 500
 2. a) 0,00995 b) 0,0024 c) 0,000935 d) 93 500 000

3.



4. a) 0,005 b) 0,24 c) 2,3 d) 0,7 e) 2 020 f) 350
 5. a) 23 000 b) 3,5 c) 5 200 000 d) 23 000 e) 0,0035
 6. a) 2 072 b) 284,2 c) -268 d) 472,2
 7. a) treba spojiti s 5 dm, b) treba spojiti s 240 cm, c) treba spojiti s 9 500 mm, a d) treba spojiti s 0,0105 km.
 8. a) 2 095 b) 248 000 c) 73 300 000 000 d) 29 400
 9. a) 0,885 b) 2,04 c) 0,07 d) 2 020 e) 2 300 f) 0,399 g) 0,035 h) -268 i) 472,2
 10. a) $\frac{5}{6}$ b) 144 c) 13 800 d) 1 min 10 s e) 2 200 f) 350 g) 533 h) 10 318 i) 87 008 403

1.



baterija

2. b)

3. Na primjer električno glačalo i električni štednjak.

4. polovi

5. Pozitivan ion nastaje kada se atomu oduzme jedan ili više elektrona.

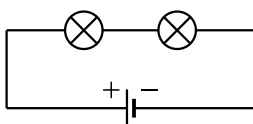
6. Treba zaokružiti pojmove: plastična folija, drveni trokut, destilirana voda, drvena kocka i stakleni štapić.

7. pozitivni, negativni

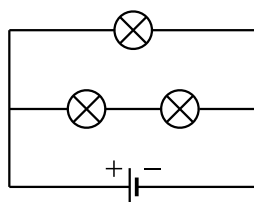
8. Baloni će se odbijati jer se istoimeni naboji odbijaju.

9. elektroni, ioni

10. a)



b)



11. magnetska svojstva

12. Kada ima više elektrona u elektronskom omotaču nego protona u jezgri.

13. a)

14. a) N b) T c) N d) T

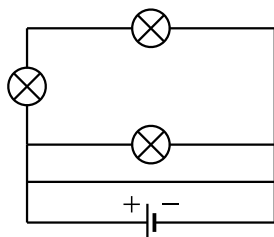
15. c)

16. c)

17. a)

18. Nastavit će svijetliti samo žaruljica 4.

19.



20. a) 1, 2 i 4 b) 1, 2 i 3

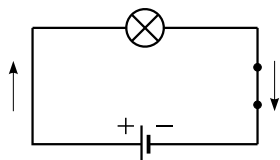
21. 2 A

22. 40 C

23. 5 s

24. negativnog naboja

1.



2. a)

3. žarulja

4. sjeverni, južni

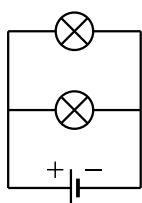
5. Negativni ion nastaje kada atom primi jedan ili više elektrona.

6. Treba zaokružiti pojmove: kovanica od 20 centa, grafitna mina i bakrena žica.

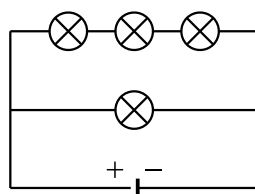
7. elektroni, protoni, neutroni

8. Baloni će se odbijati jer se istoimeni naboji odbijaju.

9. a)



b)



10. magnetska svojstva

11. Ako ima manje elektrona u elektronskom omotaču nego protona u jezgri.

12. b)

13. a) T b) T c) N d) N

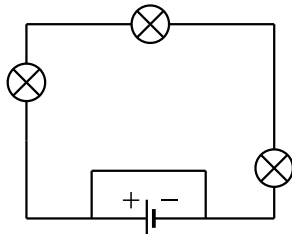
14. c)

15. b)

16. b)

17. da

18.



19. a) 1, 2 i 4 b) 2, 3 i 4

20. 2 000 A

21. 480 C

22. 0,000005 s

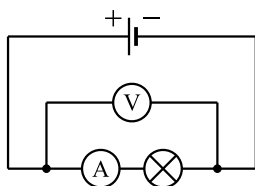
23. a) pozitivnog naboja b) -1 C

1. 20 h
2. **a)** pozitivnog naboja **b)** 9 C
3. **a)** A i B jednakim sjajem, C jačim sjajem **b)** jednako
4. 2 000 A
5. 0,048 C
6. c)
7. c)
8. u drugom

1.

fizička veličina	oznaka fizičke veličine	naziv i oznaka mjerne jedinice
naboj	Q	kulon, C
napon	U	volt, V
struja	I	amper, A
otpor	R	om, Ω
snaga	P	vat, W
rad	W	džul, J

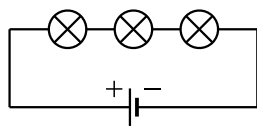
2.



3. d), najjača baterija, a samo jedna žarulja.

4. a) N b) T c) N

5. u serijski spoj,



6. Elektromagnetska indukcija nastanak je električne struje u zavojnici zbog promjenjivog magnetskog polja.

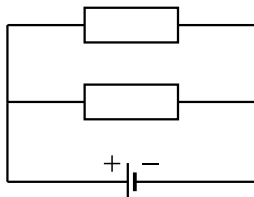
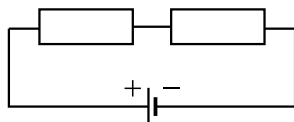
7. a) 4,167 A b) 14,4 MJ

8. 4 s

9. 84 centa

10. 110 A

11. 0,4 V

12. $R = 2,72 \Omega$,13. $R = 15 \Omega$,14. a) Veći otpor ima otpornik B. b) $I_A = 133,33 \text{ A}$, $I_B = 66,66 \text{ A}$ 15. $l = 1,214 \text{ m}$ 16. a) $U = 0,05 \text{ mV}$ b) $U = 0,0125 \text{ mV}$

17. a) 5,25 centa b) 3,5 centa

1.

fizička veličina	oznaka fizičke veličine	naziv i oznaka mjerne jedinice
struja	I	amper, A
napon	U	volt, V
otpor	R	om, Ω
naboj	Q	kulon, C
rad	W	džul, J
snaga	P	vat, W

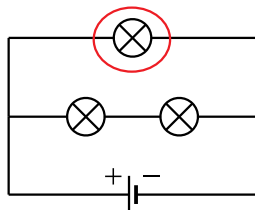
2. c), jedna baterija, a 3 serijski spojene žarulje.

3. Ohmov zakon definira odnos električne struje, napona i otpora.

Električna struja proporcionalna je naponu, a obrnuto proporcionalna otporu u strujnom krugu.

4. a) N b) N c) T

5.



6.

serijski spoj trošila	paralelni spoj trošila
a), c)	b), d)

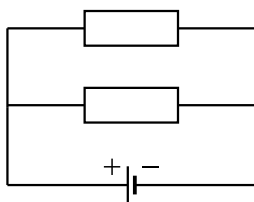
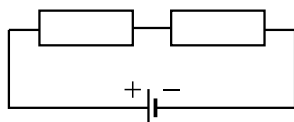
7. a) 8,7 A b) 4,6 kWh

8. 3 h

9. 126 centa

10. 0,22 A

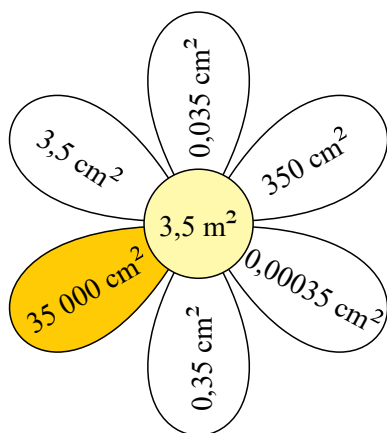
11. 0,02 V

12. $R = 2,22 \Omega$,13. $R = 25 \Omega$,14. a) Veći otpor ima otpornik B. b) $I_A = 2,66 \text{ A}$, $I_B = 1,33 \text{ A}$ 15. $l = 2,428 \text{ m}$ 16. a) $I_1 = 0,2 \text{ A}$, $I_2 = 0,1 \text{ A}$, $I_3 = 0,1 \text{ A}$, $U_1 = 5 \text{ V}$, $U_2 = 2,5 \text{ V}$ b) Otpor svake žarulje je 25Ω .

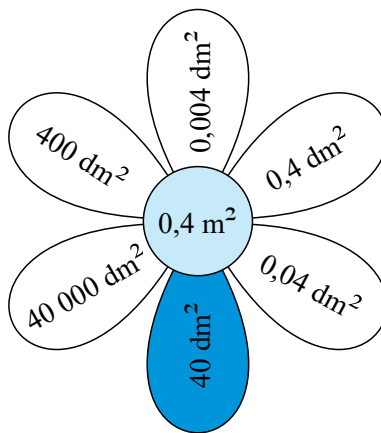
1. a) $I_1 = 0,4 \text{ A}$, $I_2 = 0,2 \text{ A}$, $I_3 = 0,2 \text{ A}$, $U_1 = 3,33 \text{ V}$, $U_2 = 1,67 \text{ V}$ b) Otpor svake žarulje je $8,33 \Omega$.
2. a) 232,5 min b) 258,4 min
3. a) 261,625 W b) 83,3 %
4. 95 %
5. 85Ω
6. $I_1 = 0,66 \text{ A}$, $I_2 = 0,22 \text{ A}$, $I_3 = 0,44 \text{ A}$
7. 32 V
8. Različitim sjajem, tanja je sjajnija jer ima manji otpor.
9. b)

1. a) 0,035 b) 0,024 c) 0,0085 d) 500

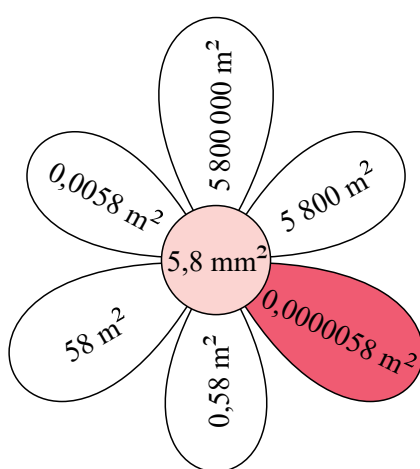
2. a)



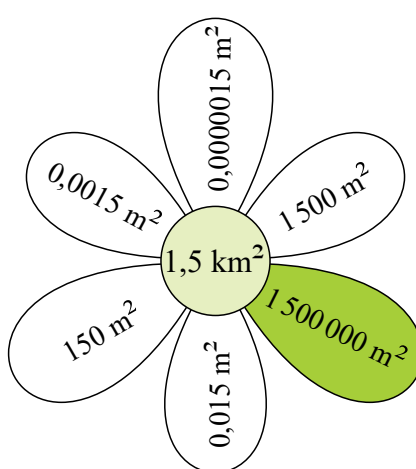
b)



c)



d)



3. a) 5 900 000 b) 0,4 c) 0,0000058 d) 15

4. a) 5 533 b) 11 318 c) 67 067,467 d) 54 dm 3 cm e) 4 m² 5 905 cm² f) 50 m³ 0 dm³ 3 cm³

5. a) 20 b) 50 c) 0,5 d) 0,045

6. a) 0,0065 kg = 6,5 g b) 8,4 kg = 840 dag c) 0,53 t = 530 kg d) 0,07 g = 70 mg
e) 2 400 kg = 2,4 t

7. a) 300 b) 0,65 c) 720 000 d) 8 300 e) 0,0075

8. a) 60 300 b) 1 500 c) 2 000 d) 0,0123

9. a) 9 300 b) 0,0015 c) 0,0092 d) 9 300

10. a) 0,0025 b) 50 000 c) 3 000 d) 560

11. a) 0,0003 b) 0,0015 c) 200 d) 4

1. a) stalnu, iznos, smjer b) količniku c) m/s

2. a) N b) N

3.

automobil	bicikl	zrakoplov	pješak	satelit
100 km/h	25 km/h	1 000 km/h	5 km/h	29 000 km/h

4. a) 6,55 m/s b) 4,55 m/s

5. b)

6. a) 0,5 s b) 5

7. 4 500 s

8. 5,98 m/s

9. a) 30 b) 36

10. a) 500 s b) 5 km

11. a) $v_1 = 2 \text{ m/s}$, $v_2 = 4 \text{ m/s}$, $v_3 = 4 \text{ m/s}$, $v_4 = 4 \text{ m/s}$, $v_5 = 4 \text{ m/s}$

b) U prve dvije sekunde brzina se povećava, od druge do pete tijelo se giba stalnom brzinom, od pete do sedme brzina se smanjuje, od sedme do devete brzina je stalna.

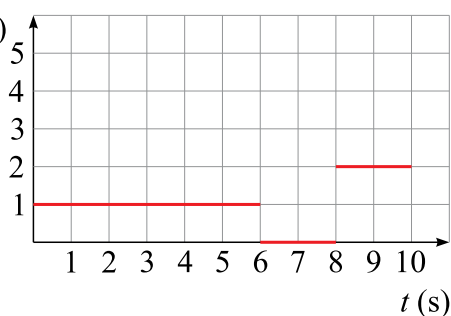
c) 4 m

12. a) $12,5 \text{ m/s}^2$ b) 22 500 N

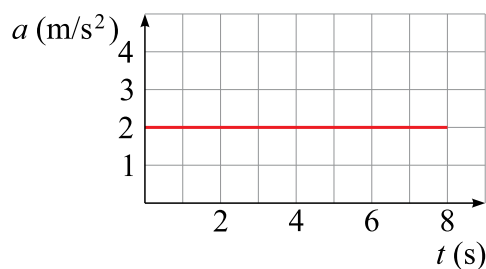
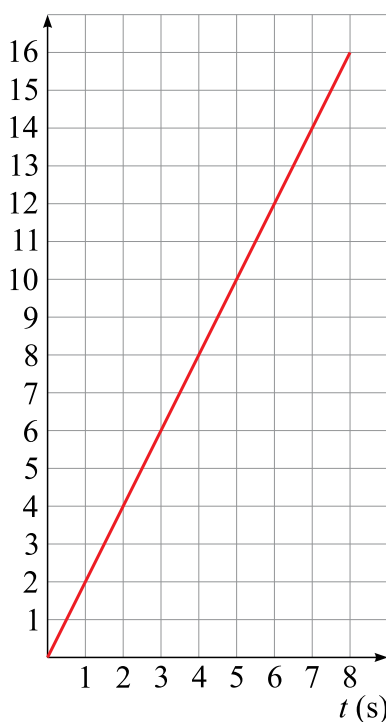
13. 100 N

14. 50 kg

15. a) Tijelo se jednoliko giba. b) Tijelo miruje. c) Tijelo se jednoliko giba.

d) $v \text{ (m/s)}$ 

16. 2 min 5 s

17. a) 16 m/s b) $v \text{ (m/s)}$ 

1. To je gibanje sa stalnim ubrzanjem.

2. a) mijenja brzina b) sila, masa c) jednoliko ubrzano, sila teža d) količniku

3. a) N b) T

4.

automobil	bicikl	zrakoplov	pješak	satelit
100 km/h	20 km/h	1 000 km/h	4 km/h	30 000 km/h

5. a) 6,55 m/s b) 4,55 m/s

6. a)

7. a) 0,8 s b) 1

8. 5 100 s

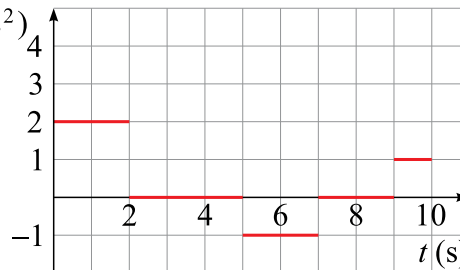
9. 5,98 m/s

10. a) 30 b) 360

11. a) 333,33 s b) Jedan je prešao put od 3 333,3 m, a drugi 6 666,7 m.

12. a) $v_6 = 3 \text{ m/s}$, $v_7 = 2 \text{ m/s}$, $v_8 = 2 \text{ m/s}$, $v_9 = 2 \text{ m/s}$ b) od druge do pete, od sedme do devete

c) 16 m d) 12 m e) $a \text{ (m/s}^2\text{)}$

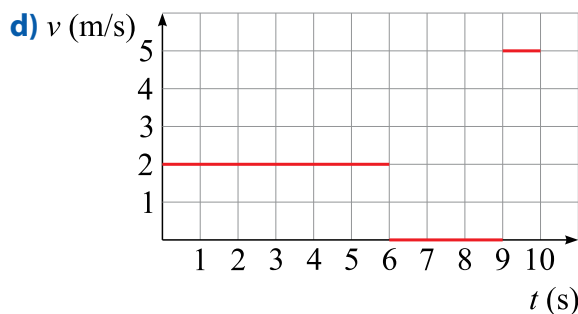


13. a) 10 m/s^2 b) 18 000 N

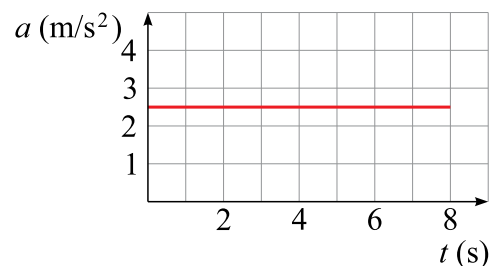
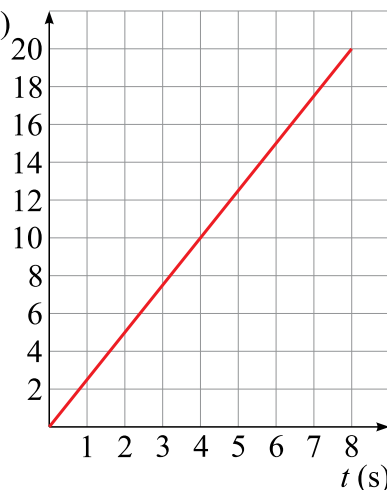
14. 1 000 N

15. 5 kg

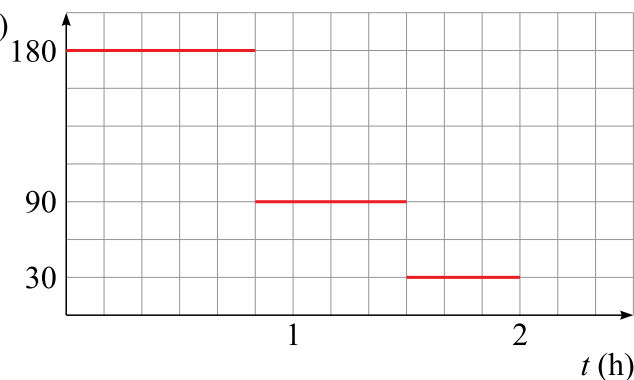
16. a) Tijelo se jednoliko giba. b) Tijelo miruje. c) Tijelo se jednoliko giba.



17. a) 20 m/s b) $v \text{ (m/s)}$



1. a) 180 km/h b)
- v
- (m/s)

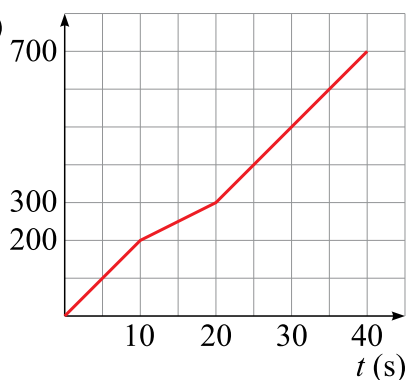


2. 119,04 s

3. a)
- $2,77 \text{ m/s}^2$
- b) 138,8 m

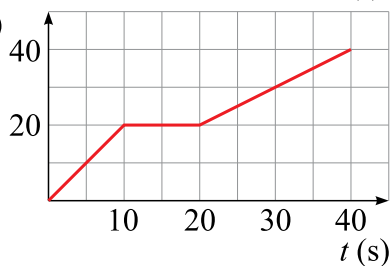
- 4.
- $1,5a$

5. a)
- s
- (m)



- b)
- $17,5 \text{ m/s}$
- c) 700 m

6. a)
- v
- (m/s)



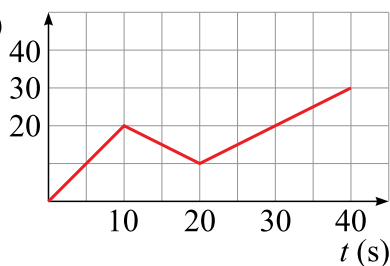
- b)
- 1 m/s^2
- c) 40 m/s d) 700 m

7. a) 20 N b) 200 J c) 1,4 s d)
- $14,1 \text{ m/s}$

- 8.
- $76,6 \text{ km/h}$

9. 375 m

10. a)
- v
- (m/s)

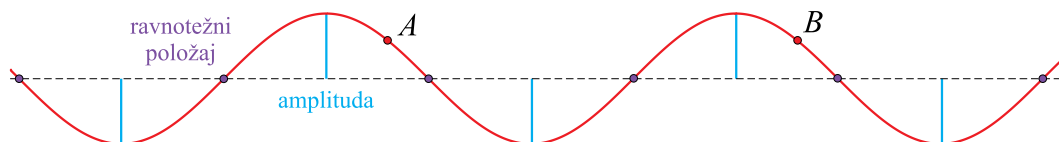


- b)
- $13,33 \text{ m/s}$
- c) 20 m/s d) 400 m

1.

fizička veličina	oznaka fizičke veličine	osnovna mjerna jedinica	oznaka osnovne mjerne jedinice
brzina	v	metar u sekundi	m/s
frekvencija	f	herc	Hz
valna duljina	λ	metar	m

2.



3. a) T b) T c) N d) N

4. 1) visina valnog brijega

3) vrijeme potrebno da val prijeđe put jednak jednoj valnoj duljini

5) udaljenost dvaju susjednih bregova

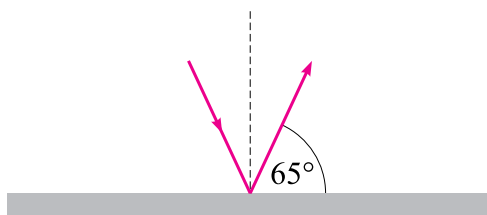
4) broj titraja u jednoj sekundi

2) bilo koja udaljenost od ravnotežnog položaja

5. a) energiju b) 20 000 Hz c) bregove

6. a) 40 cm b) 20 cm c) 0,4 m/s

7. a) 25° b)



8. 1 360 m

9. 0,41 Hz

10. 0,1 s

11. 0,2 Hz

12. 15 m

13. 0,15 m i 0,1 m

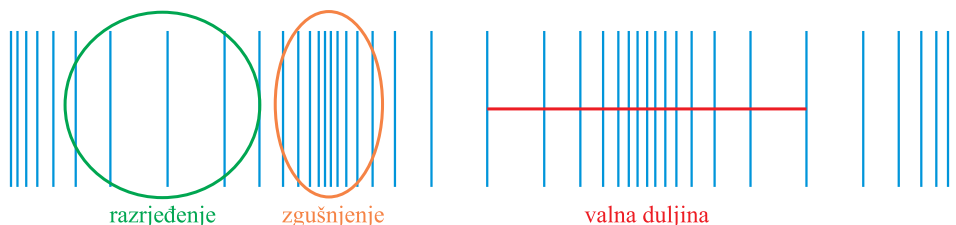
14. 0,772 m i 0,386 m

15. a) 4 000 b) 5 000 000 c) 0,6

1.

fizička veličina	oznaka fizičke veličine	osnovna mjerna jedinica	oznaka osnovne mjerne jedinice
brzina	v	metar u sekundi	m/s
frekvencija	f	herc	Hz
valna duljina	λ	metar	m

2.

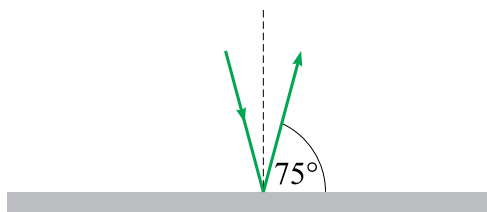


3. a) N b) N c) N d) T e) N

4. a) 20 Hz b) razrjeđenja c) umnošku

5. a) 10 Hz b) 40 cm c) 20 cm d) 0,4 m/s

6. a) 15° b)



7. 2 040 m

8. 0,05 Hz

9. 0,1 s

10. 100 Hz

11. 1,5 m

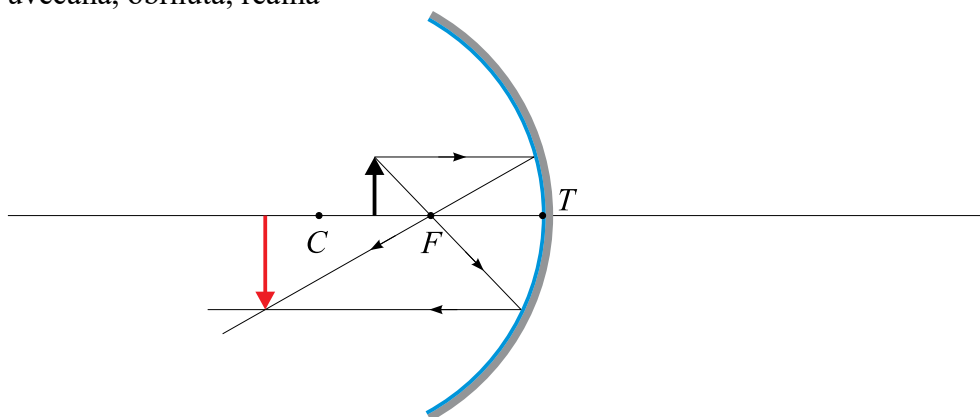
12. 0,15 m i 0,13 m

13. 0,772 m i 0,193 m

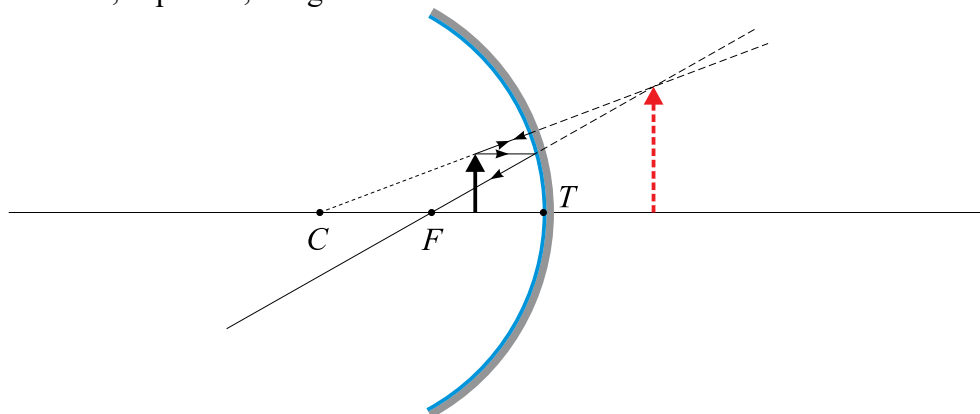
14. a) 6 000 Hz b) 4 000 000 Hz c) 0,5 Hz

1. a) 5 000 Hz b) 4 000 000 Hz c) 0,9 Hz
2. 0,75 m, dvostruko manja
3. 0,005 m i 0,003 m
4. Poveća se za 5,5 %.
5. 0,005 m i 0,004 m
6. 4 712 m
7. Valna se duljina u vodi povećá. Valne duljine su 0,772 m i 3,409 m.

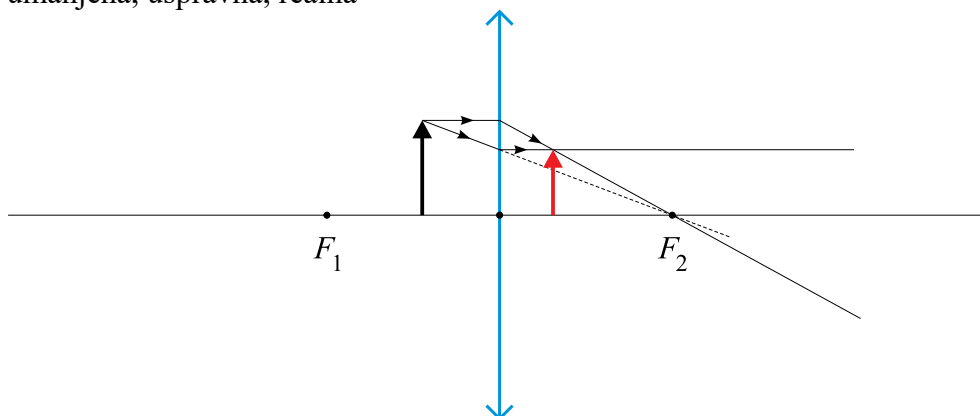
1. 2) vrlo uzak svjetlosni snop
 5) tijelo koje reflektira svjetlost
 4) pojava koja nastaje zbog pravocrtnog širenja svjetlosti
 3) prozirno tijelo kroz koje se svjetlost može širiti
 1) tijelo ili izvor svjetlosti koji stvara vlastitu svjetlost
2. a) izvori b) prostire c) 300 000 km/s d) zrcalo e) sferna zrcala f) skupljaju
3. a)
- 4.
- | prirodni izvori svjetlosti | umjetni izvori svjetlosti |
|----------------------------|---------------------------|
| zvijezde, Sunce | šibica, baterijska lampa |
5. 1) b) 2) a) 3) a) 4) a)
6. uvećana, obrnuta, realna



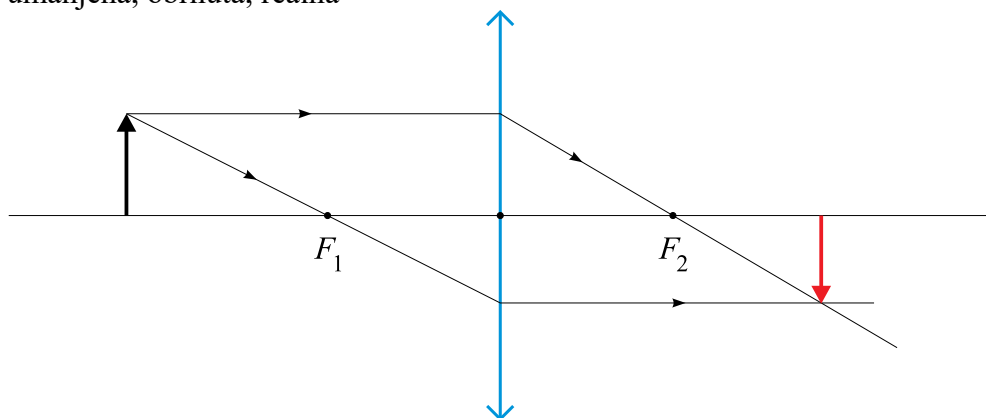
7. uvećana, uspravna, imaginarna



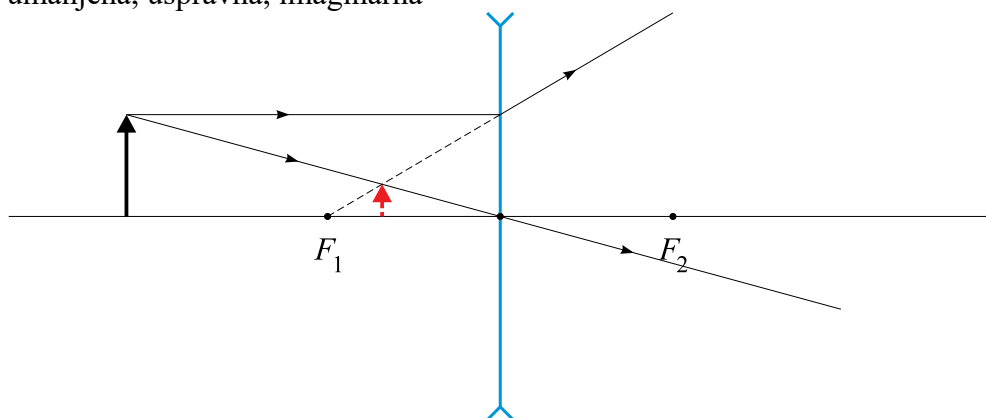
8. b)
9. umanjena, uspravna, realna



10. umanjena, obrnuta, realna



11. umanjena, uspravna, imaginarna



12. -75 cm

13. Mjesec je između Zemlje i Sunca.

14.

žarišna duljina	jakost leće
20 cm	5 dioptrijske
25 cm	4 dioptrijske

15. 500 s

1. Tijelo koje samo zrači svjetlost.

2.

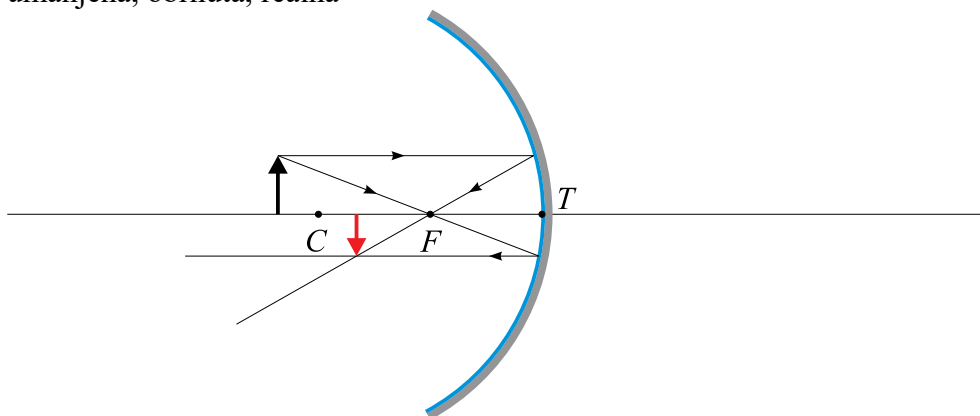
prirodni izvori svjetlosti	umjetni izvori svjetlosti
zvijezde, Sunce	svijeća, žarulja

3. Tvar kroz koju se svjetlost može širiti.

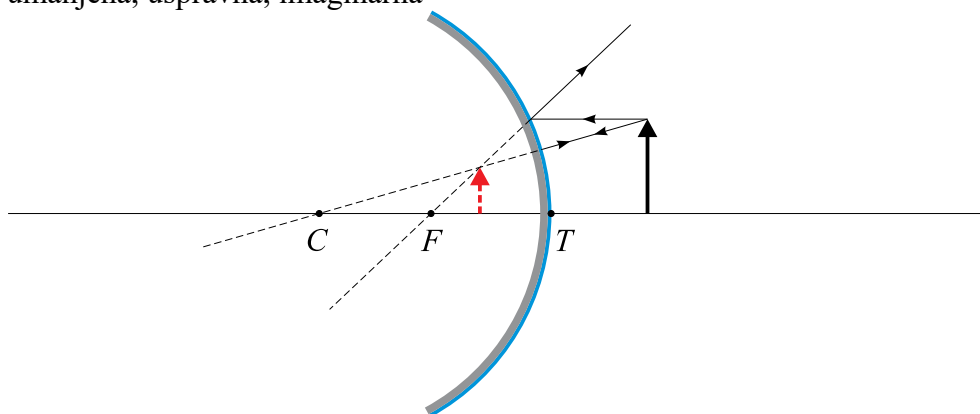
4. Nestvarna je, uspravna i jednake veličine kao predmet.

5. 1) b) 2) b) 3) b) 4) b)

6. umanjena, obrnuta, realna

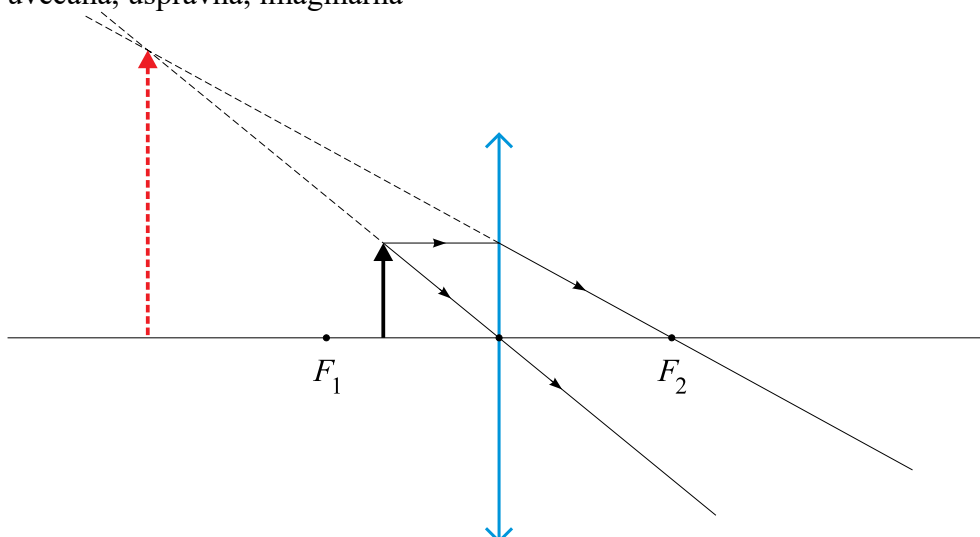


7. umanjena, uspravna, imaginarna

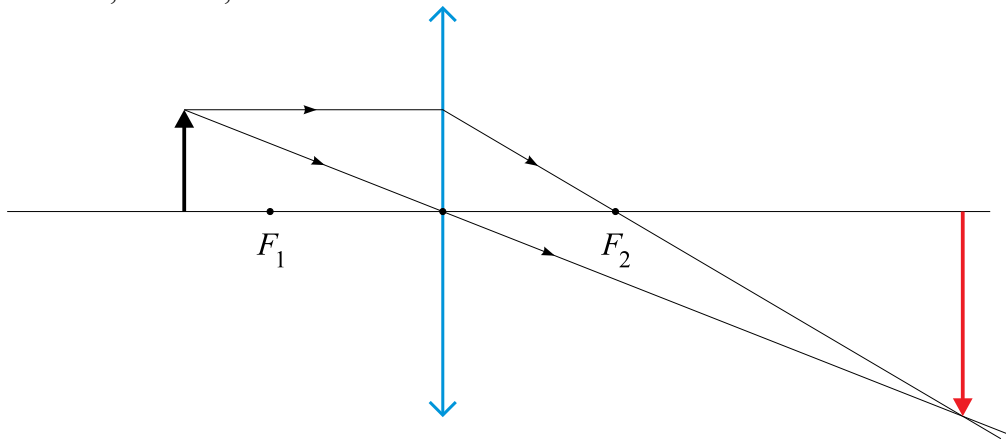


8. a)

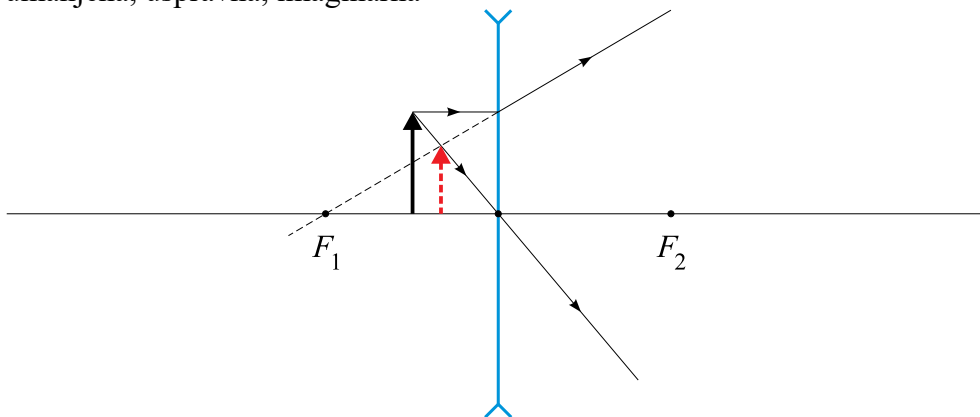
9. uvećana, uspravna, imaginarna



10. uvećana, obrnuta, realna



11. umanjena, uspravna, imaginarna



12. 75 cm

13. Zemlja je između Mjeseca i Sunca.

14.

žarišna duljina	jakost leće
50 cm	2 dioptrijske
-50 cm	-2 dioptrijske

15. 2586,7 s

1. $-75\text{ cm}, 25\text{ cm}$
2. 120 cm , s iste strane kao i predmet
3. $10\text{ cm}, 4, m = -1$
4. 1 m
5. $726\,000\text{ km}$
6. $6 \cdot 10^{14}\text{ Hz}$
7. 600 nm , narančasta boja
8. c)
9. $2,97\text{ m}$