

## Korjenovanje - zadatci za vježbu

1. Izračunaj:

a)  $\sqrt{3600}$  ..... (Rj: 60)

b)  $\sqrt{810000}$  ..... (Rj: 900)

c)  $\sqrt{0.25}$  ..... (Rj: 0.5)

d)  $\sqrt{1.69}$  ..... (Rj: 1.3)

e)  $\sqrt{0.000009}$  ..... (Rj: 0.003)

f)  $\sqrt{2304}$  ..... (Rj: 48)

g)  $\sqrt{529}$  ..... (Rj: 23)

h)  $\sqrt{2916}$  ..... (Rj: 54)

i)  $\sqrt{\frac{4}{49}}$  ..... (Rj:  $\frac{2}{7}$ )

j)  $\sqrt{\frac{3645}{2880}}$  ..... (Rj:  $\frac{9}{8}$ )

k)  $\sqrt{7\frac{9}{16}}$  ..... (Rj:  $\frac{11}{4}$ )

l)  $\sqrt{2 - \frac{14}{25}}$  ..... (Rj:  $\frac{6}{5}$ )

m)  $\sqrt{324} + \sqrt{576}$  ..... (Rj: 42)

n)  $\sqrt{324 + 576}$  ..... (Rj: 30)

o)  $7\sqrt{144} - \sqrt{100} + 3\sqrt{3 + 42 : 7}$  ..... (Rj: 83)

p)  $-\sqrt{-3(14 - 41)} + 4^2\sqrt{(-4)^2}$  ..... (Rj: 55)

q)  $\frac{-3}{2}\sqrt{\frac{7}{4} \cdot \frac{8}{63} + \frac{7}{15} : \frac{3}{10}} + \frac{5}{6}$  ..... (Rj:  $-\frac{7}{6}$ )

r)  $\frac{\sqrt{30^2 + 40^2} - 2^3}{(\sqrt{49} + 5)^2}$  ..... (Rj:  $\frac{7}{24}$ )

s)  $\sqrt{-11 + 3 \cdot 5^2} - 6^2$  ..... (Rj: 28)

t)  $4(\sqrt{31 + 18} + \sqrt{26 \cdot 10 - 35} - 2\sqrt{81})^2$  ..... (Rj: 64)

2. Izračunaj duljinu stranice i opseg kvadrata kojemu je površina:

a)  $36 \text{ cm}^2$  ..... (Rj:  $a = 6 \text{ cm}$ ,  $O = 24 \text{ cm}$ )

b)  $1210000 \text{ mm}^2$  ..... (Rj:  $a = 11 \text{ dm}$ ,  $O = 44 \text{ dm}$ )

c)  $2.56 \text{ dm}^2$  ..... (Rj:  $a = 1.6 \text{ dm}$ ,  $O = 6.4 \text{ dm}$ )

3. Izračunaj duljinu polumjera i opseg kruga kojemu je površina:

- a)  $64\pi \text{ dm}^2$  ..... (Rj:  $r = 8 \text{ dm}$ ,  $O = 16\pi \text{ dm}$ )  
b)  $0.0016\pi \text{ m}^2$  ..... (Rj:  $r = 4 \text{ cm}$ ,  $O = 8\pi \text{ cm}$ )  
c)  $19600\pi \text{ cm}^2$  ..... (Rj:  $r = 14 \text{ dm}$ ,  $O = 28\pi \text{ dm}$ )

4. Pojednostavi:

- a)  $3\sqrt{11} - 5\sqrt{11} + 4\sqrt{11}$  ..... (Rj:  $2\sqrt{11}$ )  
b)  $\sqrt{7} + 3\sqrt{7} - 8\sqrt{7} + 3\sqrt{7}$  ..... (Rj:  $-\sqrt{7}$ )  
c)  $4\sqrt{6} - 2\sqrt{3} - 9\sqrt{3} - \sqrt{6}$  ..... (Rj:  $3\sqrt{6} - 11\sqrt{3}$ )  
d)  $-7\sqrt{5} + 3\sqrt{16} + 6\sqrt{17} + 4\sqrt{5} - \sqrt{49} + 2\sqrt{17}$  ..... (Rj:  $3\sqrt{5} + 8\sqrt{17} + 5$ )

5. Izračunaj:

- a)  $\sqrt{4 \cdot 49 \cdot 25 \cdot 121}$  ..... (Rj: 770)  
b)  $\sqrt{18} \cdot \sqrt{8}$  ..... (Rj: 12)  
c)  $\sqrt{5} \cdot \sqrt{15} \cdot \sqrt{3}$  ..... (Rj: 15)  
d)  $\sqrt{44} : \sqrt{11}$  ..... (Rj: 2)  
e)  $\sqrt{112} : \sqrt{63}$  ..... (Rj:  $\frac{4}{3}$ )  
f)  $\frac{\sqrt{75}}{\sqrt{27}}$  ..... (Rj:  $\frac{5}{3}$ )  
g)  $\frac{\sqrt{704}}{\sqrt{11}}$  ..... (Rj: 8)  
h)  $\sqrt{\frac{196}{81} \cdot 0.25 \cdot 36}$  ..... (Rj:  $\frac{14}{3}$ )  
i)  $\sqrt{64 : \frac{25}{36} \cdot 49}$  ..... (Rj:  $\frac{336}{5}$ )  
j)  $\sqrt{\frac{7}{30}} \cdot \sqrt{\frac{20}{21}} \cdot \sqrt{\frac{25}{2}}$  ..... (Rj:  $\frac{5}{3}$ )  
k)  $\sqrt{\frac{12}{11}} \cdot \sqrt{\frac{88}{35}} : \sqrt{\frac{42}{5}}$  ..... (Rj:  $\frac{4}{7}$ )  
l)  $\sqrt{\frac{52}{45}} : \sqrt{\frac{13}{108}} : \sqrt{15}$  ..... (Rj:  $\frac{4}{5}$ )

6. Djelomično korjenuj:

- a)  $\sqrt{45}$  ..... (Rj:  $3\sqrt{5}$ )  
b)  $\sqrt{308}$  ..... (Rj:  $2\sqrt{77}$ )  
c)  $\sqrt{2925}$  ..... (Rj:  $15\sqrt{13}$ )

7. Djelomično korjenuj i pojednostavi:

- a)  $\sqrt{18} - \sqrt{2} + \sqrt{98}$  ..... (Rj:  $9\sqrt{2}$ )  
b)  $-\sqrt{54} - 3\sqrt{96} + 7\sqrt{24}$  ..... (Rj:  $-\sqrt{6}$ )  
c)  $2\sqrt{40} - 3\sqrt{117} - \sqrt{90} - 5\sqrt{52}$  ..... (Rj:  $\sqrt{10} - 19\sqrt{13}$ )  
d)  $-0.5\sqrt{56} + \frac{2}{3}\sqrt{99} + \frac{5}{2}\sqrt{44} + \sqrt{126}$  ..... (Rj:  $2\sqrt{14} + 7\sqrt{11}$ )

8. Izračunaj:

- a)  $(4\sqrt{2} - 5\sqrt{3}) \cdot 3\sqrt{5}$  ..... (Rj:  $12\sqrt{10} - 15\sqrt{15}$ )
- b)  $\sqrt{6}(-4\sqrt{3} + \sqrt{2} + 2\sqrt{6})$  ..... (Rj:  $-12\sqrt{2} + 2\sqrt{3} + 12$ )
- c)  $(6\sqrt{3} + 3\sqrt{2})(-\sqrt{7} + 2\sqrt{5})$  ..... (Rj:  $-6\sqrt{21} + 12\sqrt{15} - 3\sqrt{14} + 6\sqrt{10}$ )
- d)  $(2\sqrt{7} - 3\sqrt{8})(4\sqrt{2} - 3\sqrt{7})$  ..... (Rj:  $26\sqrt{14} - 90$ )
- e)  $\left(\frac{-6}{5}\sqrt{10}\right)^2$  ..... (Rj:  $\frac{72}{5}$ )
- f)  $(2 + 3\sqrt{11})^2$  ..... (Rj:  $103 + 12\sqrt{11}$ )
- g)  $(4\sqrt{3} - \sqrt{5})^2$  ..... (Rj:  $53 - 8\sqrt{15}$ )
- h)  $\left(\frac{2}{3}\sqrt{6} + 0.75\sqrt{2}\right)^2$  ..... (Rj:  $\frac{91}{24} + 2\sqrt{3}$ )
- i)  $\left(\sqrt{13} - \frac{5}{3}\sqrt{3}\right)^2$  ..... (Rj:  $\frac{64}{3} - \frac{10}{3}\sqrt{39}$ )
- j)  $(2\sqrt{6} + \sqrt{10})(2\sqrt{6} - \sqrt{10})$  ..... (Rj: 14)
- k)  $\left(3\sqrt{8} - \frac{2}{5}\sqrt{50}\right)\left(3\sqrt{8} + \frac{2}{5}\sqrt{50}\right)$  ..... (Rj: 64)
- l)  $(2\sqrt{7} - 5\sqrt{5})(2\sqrt{7} + 5\sqrt{5}) - (\sqrt{6} - 7\sqrt{2})^2$  ..... (Rj:  $-201 + 28\sqrt{3}$ )
- m)  $(3\sqrt{3} + 2\sqrt{8})^2 - (2\sqrt{8} + 3\sqrt{3})(2\sqrt{8} - 3\sqrt{3}) + (2\sqrt{8} - 3\sqrt{3})^2$  ..... (Rj: 113)

9. Racionaliziraj nazivnik:

- a)  $\frac{3}{\sqrt{6}}$  ..... (Rj:  $\frac{\sqrt{6}}{2}$ )
- b)  $\frac{-20}{7\sqrt{75}}$  ..... (Rj:  $\frac{-4\sqrt{3}}{21}$ )
- c)  $\frac{4\sqrt{2}}{3\sqrt{48}}$  ..... (Rj:  $\frac{\sqrt{6}}{9}$ )
- d)  $\frac{5 - 2\sqrt{28}}{4\sqrt{63}}$  ..... (Rj:  $\frac{5\sqrt{7} - 28}{84}$ )
- e)  $\frac{4\sqrt{50} + \sqrt{216}}{5\sqrt{32}}$  ..... (Rj:  $\frac{10 + 3\sqrt{3}}{10}$ )