Korjenovanje - zadatci za vježbu

1. Izračunaj:

   a) $\sqrt{3600}$ b) $\sqrt{810000}$

   c) $\sqrt{0.25}$ d) $\sqrt{1.69}$

   e) $\sqrt{0.000009}$ f) $\sqrt{2304}$

   g) $\sqrt{529}$ h) $\sqrt{2916}$

   i) $\sqrt{\frac{4}{49}}$ j) $\sqrt{\frac{3645}{2880}}$

   k) $\sqrt{7\frac{9}{16}}$ l) $\sqrt{2-\frac{14}{25}}$

   m) $\sqrt{324}+\sqrt{576}$ n) $\sqrt{324+576}$

   o) $7\sqrt{144}-\sqrt{100}+3\sqrt{3+42:7}$ p) $-\sqrt{-3\,(14-41)}+4^2\sqrt{(-4)^2}$

   q) $\frac{-3}{2}\sqrt{\frac{7}{4}\cdot\frac{8}{63}+\frac{7}{15}:\frac{3}{10}}+\frac{5}{6}$ r) $\frac{\sqrt{30^2+40^2}-2^3}{\left(\sqrt{49}+5\right)^2}$

   s) $\sqrt{-11+3\cdot 5^2}-6^2$ t) $4\left(\sqrt{31+18}+\sqrt{26\cdot 10-35}-2\sqrt{81}\right)^2$

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

   a) 36 cm^2 b) 1210000 mm^2 c) 2.56 dm^2

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

   a) 64π dm^2 b) 0.0016π m^2 c) 19600π cm^2

4. Pojednostavi:

   a) $3\sqrt{11}-5\sqrt{11}+4\sqrt{11}$ b) $\sqrt{7}+3\sqrt{7}-8\sqrt{7}+3\sqrt{7}$

   c) $4\sqrt{6}-2\sqrt{3}-9\sqrt{3}-\sqrt{6}$ d) $-7\sqrt{5}+3\sqrt{16}+6\sqrt{17}+4\sqrt{5}-\sqrt{49}+2\sqrt{17}$

5. Izračunaj:

   a) $\sqrt{4\cdot 49\cdot 25\cdot 121}$ b) $\sqrt{18}\cdot\sqrt{8}$ c) $\sqrt{5}\cdot\sqrt{15}\cdot\sqrt{3}$ d) $\sqrt{44}:\sqrt{11}$

   e) $\sqrt{112}:\sqrt{63}$ f) $\frac{\sqrt{75}}{\sqrt{27}}$ g) $\frac{\sqrt{704}}{\sqrt{11}}$ h) $\sqrt{\frac{196}{81}\cdot 0.25\cdot 36}$

   i) $\sqrt{64:\frac{25}{36}\cdot 49}$ j) $\sqrt{\frac{7}{30}}\cdot\sqrt{\frac{20}{21}}\cdot\sqrt{\frac{25}{2}}$ k) $\sqrt{\frac{12}{11}}\cdot\sqrt{\frac{88}{35}}:\sqrt{\frac{42}{5}}$ l) $\sqrt{\frac{52}{45}}:\sqrt{\frac{13}{108}}:\sqrt{15}$

6. Djelomično korjenuj:

   a) $\sqrt{45}$ b) $\sqrt{308}$ c) $\sqrt{2925}$

7. Djelomično korjenuj i pojednostavi:

   a) $\sqrt{18}-\sqrt{2}+\sqrt{98}$ b) $-\sqrt{54}-3\sqrt{96}+7\sqrt{24}$

   c) $2\sqrt{40}-3\sqrt{117}-\sqrt{90}-5\sqrt{52}$ d) $-0.5\sqrt{56}+\frac{2}{3}\sqrt{99}+\frac{5}{2}\sqrt{44}+\sqrt{126}$

8. Izračunaj:

a) $\left(4\sqrt{2}-5\sqrt{3}\right)\cdot 3\sqrt{5}$

b) $\sqrt{6}\left(-4\sqrt{3}+\sqrt{2}+2\sqrt{6}\right)$

c) $\left(6\sqrt{3}+3\sqrt{2}\right)\left(-\sqrt{7}+2\sqrt{5}\right)$

d) $\left(2\sqrt{7}-3\sqrt{8}\right)\left(4\sqrt{2}-3\sqrt{7}\right)$

e) $\left(\frac{-6}{5}\sqrt{10}\right)^2$

f) $\left(2+3\sqrt{11}\right)^2$

g) $\left(4\sqrt{3}-\sqrt{5}\right)^2$

h) $\left(\frac{2}{3}\sqrt{6}+0.75\sqrt{2}\right)^2$

i) $\left(\sqrt{13}-\frac{5}{3}\sqrt{3}\right)^2$

j) $\left(2\sqrt{6}+\sqrt{10}\right)\left(2\sqrt{6}-\sqrt{10}\right)$

k) $\left(3\sqrt{8}-\frac{2}{5}\sqrt{50}\right)\left(3\sqrt{8}+\frac{2}{5}\sqrt{50}\right)$

l) $\left(2\sqrt{7}-5\sqrt{5}\right)\left(2\sqrt{7}+5\sqrt{5}\right)-\left(\sqrt{6}-7\sqrt{2}\right)^2$

m) $\left(3\sqrt{3}+2\sqrt{8}\right)^2-\left(2\sqrt{8}+3\sqrt{3}\right)\left(2\sqrt{8}-3\sqrt{3}\right)+\left(2\sqrt{8}-3\sqrt{3}\right)^2$

9. Racionaliziraj nazivnik:

a) $\frac{3}{\sqrt{6}}$ b) $\frac{-20}{7\sqrt{75}}$ c) $\frac{4\sqrt{2}}{3\sqrt{48}}$ d) $\frac{5-2\sqrt{28}}{4\sqrt{63}}$ e) $\frac{4\sqrt{50}+\sqrt{216}}{5\sqrt{32}}$