UČNI LIST – Računanje s koreni

1) Delno koreni:

a) $\sqrt{18} =$
b) $\sqrt{20} =$
c) $\sqrt{27} =$
d) $\sqrt{40} =$
e) $\sqrt{45} =$
f) $\sqrt{48} =$
g) $\sqrt{54} =$
h) $\sqrt{98} =$
i) $\sqrt{117} =$
j) $\sqrt{125} =$
k) $\sqrt{126} =$
l) $\sqrt{128} =$
m) $\sqrt{180} =$
n) $\sqrt{150} =$
o) $\sqrt{450} =$

2) Izračunaj:

a) $\sqrt{2} \cdot \sqrt{18} =$
b) $\sqrt{2 \cdot 7 \cdot 7 \cdot 8} =$
c) $\sqrt{13} \cdot \sqrt{52} =$
d) $\sqrt{1\frac{1}{5}} \cdot \sqrt{\frac{5}{24}} =$
e) $\sqrt{3} \cdot \sqrt{27} =$
f) $\sqrt{4 \cdot 10^6} =$
g) $\sqrt{8} \cdot \sqrt{72} =$
h) $\sqrt{2\frac{1}{5}} \cdot \sqrt{11\frac{4}{11}} =$

3) Izračunaj:

a) $\sqrt{15} \cdot \sqrt{3} =$
b) $\sqrt{54} + \sqrt{96} =$
c) $\sqrt{14} : \sqrt{21} =$
d) $\sqrt{48} - \sqrt{12} =$

4) Kvadriraj:

a) $\left(4+\sqrt{2}\right)^2 =$
b) $\left(3-\sqrt{5}\right)^2 =$
c) $\left(5+2\sqrt{3}\right)^2 =$
d) $\left(2-3\sqrt{6}\right)^2 =$
e) $\left(\sqrt{5}+8\right)^2 =$
f) $\left(\sqrt{2}+\sqrt{7}\right)^2 =$

5) Kvadriraj:

a) $\left(\sqrt{5}-\sqrt{3}\right)^2 =$
b) $\left(2\sqrt{3}+\sqrt{7}\right)^2 =$
c) $\left(\sqrt{14}+\sqrt{2}\right)^2 =$
d) $\left(\sqrt{5}-\sqrt{10}\right)^2 =$
e) $\left(3\sqrt{2}+\sqrt{6}\right)^2 =$
f) $\left(\sqrt{15}-\sqrt{2}\right)^2 =$

6) Kvadriraj:

a) $\left(2\sqrt{5}-\sqrt{2}\right)^2 =$
b) $\left(4\sqrt{6}+\sqrt{3}\right)^2 =$
c) $\left(3\sqrt{8}-2\sqrt{5}\right)^2 =$
d) $\left(5\sqrt{2}+2\sqrt{6}\right)^2 =$
e) $\left(3\sqrt{3}-2\sqrt{8}\right)^2 =$
f) $\left(7\sqrt{8}-5\sqrt{2}\right)^2 =$

7) Izračunaj:

a) $\left(\sqrt{3}-7\right)\left(\sqrt{3}+7\right) =$
b) $\left(\sqrt{2}+\sqrt{3}\right)\left(\sqrt{2}-\sqrt{3}\right)+1 =$
c) $\left(2+\sqrt{5}\right)^2 - \sqrt{80} =$
d) $\left(3\sqrt{2}-4\right)^2 + \sqrt{32} =$

8) Poenostavi:

a) $\left(5\sqrt{8}-3\sqrt{2}\right)^2+\left(3+\sqrt{5}\right)^2=$

b) $\left(4\sqrt{3}+2\sqrt{8}\right)^2-\left(3\sqrt{12}-5\sqrt{2}\right)^2=$

c) $\left(9+4\sqrt{5}\right)\cdot\left(2-\sqrt{5}\right)^2=$

d) $\left(3+\sqrt{7}\right)^2\cdot\left(16-6\sqrt{7}\right)=$

e) $\left(\sqrt{6}-\sqrt{2}\right)^2+\dfrac{2}{\sqrt{3}-1}=$

f) $\left(1-\sqrt{3}\right)^2\cdot\left(4+2\sqrt{3}\right)+\dfrac{\sqrt{3}+\sqrt{6}}{\sqrt{3}}=$

g) $\left(2\sqrt{3}+5\right)^2-\left(6-\sqrt{3}\right)\cdot\left(3+5\sqrt{3}\right)-\sqrt{147}=$

h) $\left(3\sqrt{2}+5\right)^2-\left(8-\sqrt{2}\right)\cdot\left(3+4\sqrt{2}\right)-\sqrt{162}=$

i) $\left(3\sqrt{2}+5\right)^2-\left(6-\sqrt{2}\right)\cdot\left(4+5\sqrt{2}\right)-\sqrt{162}=$

j) $\left(7+\sqrt{6}\right)^2+\dfrac{18}{\sqrt{6}}-\left(\sqrt{2}+5\sqrt{3}\right)\cdot\left(4\sqrt{2}-\sqrt{3}\right)=$

9) Racionaliziraj:

a) $\dfrac{1}{\sqrt{5}}=$

b) $\dfrac{2}{3\sqrt{6}}=$

c) $\dfrac{1+\sqrt{2}}{\sqrt{2}}=$

d) $\dfrac{\sqrt{27}-3}{\sqrt{3}}=$

e) $\dfrac{1}{\sqrt{2}+1}=$

f) $\dfrac{4}{4-\sqrt{2}}=$

10) Racionaliziraj:

a) $\dfrac{15\sqrt{2}-6\sqrt{6}}{2\sqrt{6}-3\sqrt{2}}=$

b) $\dfrac{56-2\sqrt{3}}{2\sqrt{6}-\sqrt{2}}=$

c) $\dfrac{10\sqrt{5}-4}{4\sqrt{2}+\sqrt{10}}=$

d) $\dfrac{1+18\sqrt{6}}{4\sqrt{2}-\sqrt{3}}=$

e) $\dfrac{6-3\sqrt{2}}{3\sqrt{3}-2\sqrt{6}}=$

f) $\dfrac{3\sqrt{10}}{4\sqrt{5}-5\sqrt{2}}=$

g) $\dfrac{26\sqrt{2}-8\sqrt{5}}{3\sqrt{5}+\sqrt{2}}=$

h) $\dfrac{142+34\sqrt{5}}{3\sqrt{10}+4\sqrt{2}}=$

11) Izračunaj:

a) $\dfrac{7\sqrt{10}-4\sqrt{5}}{2\sqrt{5}-\sqrt{10}}+\left(1-3\sqrt{2}\right)^2=$

b) $\dfrac{33+18\sqrt{2}}{2\sqrt{6}-\sqrt{3}}-\sqrt{96}+\left(2-7\sqrt{3}\right)^2=$

c) $\dfrac{50-14\sqrt{5}}{2\sqrt{10}+\sqrt{2}}-\sqrt{90}-\left(3-4\sqrt{2}\right)^2=$

d) $\dfrac{46\sqrt{2}+28\sqrt{3}}{\sqrt{3}+5\sqrt{2}}-\dfrac{18+2\sqrt{3}}{3\sqrt{2}-\sqrt{6}}=$

12) Izračunaj:

a) $\left(3\sqrt{10}-2\sqrt{5}\right)^2-\left(\sqrt{14}-6\right)\cdot\left(\sqrt{14}+6\right)-\sqrt{128}=$

b) $\dfrac{9\sqrt{5}+14\sqrt{2}}{\sqrt{5}+3\sqrt{2}}+\left(4\sqrt{5}-\sqrt{2}\right)^2-\left(7+\sqrt{10}\right)\cdot\left(7-\sqrt{10}\right)-\sqrt{40}=$

c) $\dfrac{48\sqrt{2}+25\sqrt{6}}{3\sqrt{2}+4\sqrt{6}}+\left(3-2\sqrt{3}\right)^2-\left(4-\sqrt{6}\right)\cdot\left(4+\sqrt{6}\right)-\sqrt{75}=$

d) $\left(1-\sqrt{3}\right)^2-\sqrt{54}+\dfrac{12+15\sqrt{2}}{3\sqrt{6}-\sqrt{3}}+\left(2+\sqrt{6}\right)^2=$

REŠITVE UČNEGA LISTA – Računanje s koreni

1) a) $3\sqrt{2}$
   b) $2\sqrt{5}$
   c) $3\sqrt{3}$
   d) $2\sqrt{10}$
   e) $3\sqrt{5}$
   f) $4\sqrt{3}$
   g) $3\sqrt{6}$
   h) $7\sqrt{2}$
   i) $3\sqrt{13}$
   j) $5\sqrt{5}$
   k) $3\sqrt{14}$
   l) $8\sqrt{2}$
   m) $6\sqrt{5}$
   n) $5\sqrt{6}$
   o) $15\sqrt{2}$

2) a) 6
   b) 28
   c) 26
   d) $\frac{1}{2}$
   e) 9
   f) 2000
   g) 24
   h) 5

3) a) $3\sqrt{5}$
   b) $7\sqrt{6}$
   c) $\sqrt{\frac{2}{3}}$
   d) $2\sqrt{3}$

4) a) $18+8\sqrt{2}$
   b) $14-6\sqrt{5}$
   c) $37+20\sqrt{3}$
   d) $58-12\sqrt{6}$
   e) $69+16\sqrt{5}$
   f) $9+2\sqrt{14}$

5) a) $8-2\sqrt{15}$
   b) $19+4\sqrt{21}$
   c) $16+4\sqrt{7}$
   d) $15-10\sqrt{2}$
   e) $24+12\sqrt{3}$
   f) $17-2\sqrt{30}$

6) a) $22-4\sqrt{10}$
   b) $99+24\sqrt{2}$
   c) $92-24\sqrt{10}$
   d) $74+40\sqrt{3}$
   e) $59-24\sqrt{6}$
   f) 162

7) a) 46
b) 0
c) 9
d) $34-20\sqrt{2}$

8) a) $112+6\sqrt{5}$
b) $-78+92\sqrt{6}$
c) 1
d) 4
e) $9-3\sqrt{3}$
f) $5+\sqrt{2}$
g) $34-14\sqrt{3}$
h) $27-8\sqrt{2}$
i) $29-5\sqrt{2}$
j) $62-2\sqrt{6}$

9) a) $\frac{\sqrt{5}}{5}$
b) $\frac{\sqrt{6}}{9}$
c) $\frac{\sqrt{2}+2}{2}$
d) $3-\sqrt{3}$
e) $\sqrt{2}-1$
f) $\frac{8+2\sqrt{2}}{7}$

10) a) $3+4\sqrt{3}$
b) $5\sqrt{6}+2\sqrt{2}$
c) $2\sqrt{10}-3\sqrt{2}$
d) $5\sqrt{3}+2\sqrt{2}$
e) $2\sqrt{3}+\sqrt{6}$
f) $2\sqrt{2}+\sqrt{5}$
g) $-4+2\sqrt{10}$
h) $5\sqrt{10}-\sqrt{2}$

11) a) $22-\sqrt{2}$
b) $151-23\sqrt{3}$
c) $-41+19\sqrt{2}$
d) $8-5\sqrt{2}$

12) a) $132-68\sqrt{2}$
b) $46-9\sqrt{10}$
c) $15-14\sqrt{3}$
d) $14+2\sqrt{6}$