

**Quadratwurzeln****Lösungen+****Übungsblatt 2**

1. (a)  $\sqrt{10\,000} = 100$   
(b)  $\sqrt{1\,000\,000} = 1000$   
(c)  $\sqrt{100\,000\,000} = 10\,000$
2. (a)  $\sqrt{16\,000\,000} = 4000$   
(b)  $\sqrt{169\,0000} = 1300$   
(c)  $\sqrt{36\,000\,000} = 6000$   
(d)  $\sqrt{81\,0000} = 900$
3. (a)  $\sqrt{4.41} = 2.1$   
(b)  $\sqrt{2.89} = 1.7$   
(c)  $\sqrt{0.09} = 0.3$   
(d)  $\sqrt{1.69} = 1.3$   
(e)  $\sqrt{0.01} = 0.1$   
(f)  $\sqrt{4.84} = 2.2$
4. (a)  $\sqrt{33^2} = 33$   
(b)  $\sqrt{0.3^2} = 0.3$   
(c)  $\sqrt{333^2} = 333$   
(d)  $\sqrt{(-3)^2} = 3$
5. (a)  $\sqrt{\frac{1}{25}} = \frac{1}{5}$   
(b)  $\sqrt{\frac{1}{484}} = \frac{1}{22}$   
(c)  $\sqrt{\frac{16}{36}} = \frac{2}{3}$   
(d)  $\sqrt{\frac{400}{81}} = \frac{20}{9}$
- (d)  $\sqrt{10^8} = 10^4 = 10\,000$   
(e)  $\sqrt{10^{12}} = 10^6$   
(f)  $\sqrt{10^{90}} = 10^{45}$
- (e)  $\sqrt{25\,000\,000} = 5000$   
(f)  $\sqrt{529\,0000} = 2300$   
(g)  $\sqrt{22500} = 150$   
(h)  $\sqrt{289\,0000} = 1700$
- (g)  $\sqrt{5.29} = 2.3$   
(h)  $\sqrt{0.04} = 0.2$   
(i)  $\sqrt{0.0196} = 0.14$   
(j)  $\sqrt{0.0064} = 0.08$   
(k)  $\sqrt{0.0484} = 0.22$   
(l)  $\sqrt{0.000036} = 0.006$
- (e)  $\sqrt{3 \cdot 3 \cdot 3 \cdot 3} = 9$   
(f)  $\sqrt{3} \cdot \sqrt{3} = 3$   
(g)  $\sqrt{1^3} = 1$   
(h)  $(\sqrt{3})^4 = 9$
- (e)  $\sqrt{\frac{1}{64}} = \frac{1}{8}$   
(f)  $\sqrt{\frac{529}{441}} = \frac{23}{21}$   
(g)  $\sqrt{\frac{361}{625}} = \frac{19}{25}$   
(h)  $\sqrt{\frac{196}{576}} = \frac{7}{12}$

6. (a)  $\sqrt{2} \cdot \sqrt{8} = \sqrt{16} = 4$  (d)  $\sqrt{6} \cdot \sqrt{24} = \sqrt{144} = 12$   
 (b)  $\sqrt{3} \cdot \sqrt{27} = \sqrt{81} = 9$  (e)  $\sqrt{8} \cdot \sqrt{18} = \sqrt{144} = 12$   
 (c)  $\sqrt{1000} \cdot \sqrt{10} = \sqrt{10^4} = 100$  (f)  $\sqrt{2} \cdot \sqrt{0.18} = \sqrt{0.36} = 0.6$
7. (a)  $\sqrt{75} : \sqrt{3} = \sqrt{25} = 5$  (d)  $\sqrt{5} : \sqrt{20} = \sqrt{1/4} = 1/2$   
 (b)  $\sqrt{720} : \sqrt{5} = \sqrt{144} = 12$  (e)  $\sqrt{63} : \sqrt{7} = \sqrt{9} = 3$   
 (c)  $\sqrt{1000} : \sqrt{10} = \sqrt{100} = 10$  (f)  $\sqrt{0} : \sqrt{11} = \sqrt{0} = 0$
8. (a)  $\sqrt{5^6} = 5^3$  (c)  $\sqrt{8^{14}} = 8^7$   
 (b)  $\sqrt{14^{10}} = 14^5$  (d)  $\sqrt{15^8} = 15^4$
9. (a)  $\sqrt{\sqrt{16}} = 2$  (c)  $\sqrt{\sqrt{81}} = 3$   
 (b)  $\sqrt{\sqrt{256}} = 4$  (d)  $\sqrt{\sqrt{100000000}} = 100$
10. (a)  $2 < \sqrt{7} < 3$  (d)  $24 < \sqrt{593} < 25$   
 (b)  $8 < \sqrt{70} < 9$  (e)  $18 < \sqrt{347} < 19$   
 (c)  $14 < \sqrt{200} < 15$  (f)  $0 < \sqrt{0.7} < 1$
11. (a) •  $\left(\frac{5}{2} + \frac{5}{5/2}\right) : 2 = \left(\frac{5}{2} + 2\right) : 2 = \frac{9}{2} : 2 = \frac{9}{4}$   
 •  $\left(\frac{9}{4} + \frac{5}{9/4}\right) : 2 = \left(\frac{9}{4} + \frac{20}{9}\right) : 2 = \frac{161}{36} : 2 = \frac{161}{72}$
- (b) •  $\left(3 + \frac{10}{3}\right) : 2 = \left(3 + \frac{10}{3}\right) : 2 = \frac{19}{3} : 2 = \frac{19}{6}$   
 •  $\left(\frac{19}{6} + \frac{10}{19/6}\right) : 2 = \left(\frac{19}{6} + \frac{60}{19}\right) : 2 = \frac{721}{114} : 2 = \frac{721}{228}$
- (c) •  $\left(3 + \frac{9}{3}\right) : 2 = (3 + 3) : 2 = 6 : 2 = 3$   
 • Wie oben!
- (d) •  $\left(1 + \frac{1/3}{1}\right) : 2 = \left(1 + \frac{1}{3}\right) : 2 = \frac{4}{3} : 2 = \frac{2}{3}$   
 •  $\left(\frac{2}{3} + \frac{1/3}{2/3}\right) : 2 = \left(\frac{2}{3} + \frac{1}{2}\right) : 2 = \frac{7}{6} : 2 = \frac{7}{12}$