

Aufgabe 1.1

(a) $4^4 = 256$

(b) $19^2 = 361$

(c) $18^2 = 324$

(d) $0^0 = \text{nicht def.}$

(e) $2^8 = 256$

(f) $5^3 = 125$

(g) $2^4 = 16$

(h) $7^3 = 343$

(i) $2^3 = 8$

(j) $15^2 = 225$

(k) $3^4 = 81$

(l) $4^5 = 1024$

(m) $60^1 = 60$

(n) $2^9 = 512$

(o) $2^7 = 128$

(p) $3^6 = 729$

(q) $0^2 = 0$

(r) $8^3 = 512$

(s) $9^3 = 729$

(t) $4^3 = 64$

(u) $2^{10} = 1024$

(v) $3^3 = 27$

(w) $2^5 = 32$

(x) $1^8 = 1$

Aufgabe 1.2

(a) $(-3)^5 = -243$

(b) $(-23)^2 = 529$

(c) $(-1)^{74} = 1$

(d) $(-2)^{10} = 1024$

(e) $(-13)^2 = 169$

(f) $(-2)^6 = 64$

(g) $(-3)^3 = -27$

(h) $(-5)^4 = 625$

(i) $(-2)^7 = -128$

(j) $(-3)^4 = 81$

(k) $(-4)^5 = -1024$

(l) $(-2)^4 = 16$

(m) $(-3)^6 = 729$

(n) $(-15)^0 = 1$

(o) $(-9)^3 = -729$

(p) $(-5)^3 = -125$

(q) $(-2)^5 = -32$

(r) $(-4)^6 = 4096$

Aufgabe 1.3

(a) $\sqrt{2}^8 = 16$

(b) $\sqrt{3}^{10} = 243$

(c) $\sqrt{5}^6 = 125$

(d) $\sqrt{4}^8 = 256$

(e) $\sqrt{18}^4 = 324$

(f) $\sqrt{2}^{14} = 128$

(g) $\sqrt{11}^4 = 121$

(h) $\sqrt{4}^6 = 64$

(i) $\sqrt{23}^4 = 529$

(j) $\sqrt{2}^{10} = 32$

(k) $\sqrt{12}^4 = 144$

(l) $\sqrt{3}^6 = 27$

(m) $\sqrt{3}^8 = 81$

(n) $\sqrt{5}^8 = 625$

(o) $\sqrt{17}^4 = 289$

(p) $\sqrt{2}^{12} = 64$

(q) $\sqrt{6}^6 = 216$

(r) $\sqrt{7}^6 = 343$

Aufgabe 1.4

(a) $361 = 19^2$

(g) $343 = 7^3$

(m) $625 = 5^4$

(b) $256 = 2^8$

(h) $216 = 6^3$

(n) $32 = 2^5$

(c) $324 = 18^2$

(i) $8 = 2^3$

(o) $27 = 3^3$

(d) $16 = 2^4$

(j) $64 = 2^6$

(p) $729 = 3^6$

(e) $512 = 2^9$

(k) $128 = 2^7$

(q) $125 = 5^3$

(f) $196 = 14^2$

(l) $289 = 17^2$

(r) $1024 = 2^{10}$

Aufgabe 1.5

(a) $51\,400\,000 = 5.14 \cdot 10^7$

(b) $24\,563\,000\,000 = 2.4563 \cdot 10^{10}$

(c) $18\,710 = 1.871 \cdot 10^4$

(d) $2\,700\,000 = 2.7 \cdot 10^6$

Aufgabe 1.6

(a) 34 Milliarden = $3.4 \cdot 10^{16}$

(b) 558 Millionen = $5.58 \cdot 10^8$

(c) 3.26 Trillionen = $3.26 \cdot 10^{18}$

(d) 52 Quadrillionen = $5.2 \cdot 10^{28}$

Aufgabe 1.7

(a) $9^n = 729; n = 3$

(f) $5^n = 625; n = 4$

(b) $2^n = 512; n = 9$

(g) $2^n = 128; n = 7$

(c) $7^n = 343; n = 3$

(h) $3^n = 243; n = 5$

(d) $4^n = 64; n = 3$

(i) $6^n = 216; n = 3$

(e) $10^n = 100\,000; n = 5$

(j) $2^n = 64; n = 6$