



Englische Übungen zu Reelle Zahlen

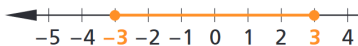
1. What is the length of the side of a square of the given area?
 - a. 729 m^2
 - b. 2304 m^2
 - c. 4225 cm^2
 - d. 1225 cm^2
 - e. $43,56 \text{ m}^2$
 - f. $94,09 \text{ a}$
 - g. $1 \text{ ha } 29 \text{ a } 96 \text{ m}^2$
 - h. $5 \text{ ha } 42 \text{ a } 89 \text{ m}^2$

2. The square number x^2 of which number x lies between the given bounds?
 - a. 15 and 17
 - b. 17 and 20
 - c. 39 and 41
 - d. 95 and 99
 - e. 88 and 90
 - f. 35 and 36,5
 - g. 46 and 48,5
 - h. 101 and 105

3. Apply the rule $\sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$ and write the term in its simplest form.
Example: $\sqrt{n^2 \cdot k^2} = \sqrt{n^2} \cdot \sqrt{k^2} = n \cdot k$
 - a. $\sqrt{4 \cdot a^2}$
 - b. $\sqrt{u^2 \cdot v^2}$
 - c. $\sqrt{c^2 \cdot 25}$
 - d. $\sqrt{9 \cdot x^2 \cdot v^2}$
 - e. $5 \cdot \sqrt{25 \cdot a^2}$





4. How many and which integers x lie between the given bounds?
- $-\sqrt{2} < x < \sqrt{2}$
 - $-\sqrt{1} < x < \sqrt{1}$
 - $-\sqrt{18} < x < 5$
 - $\sqrt{100} < x < \sqrt{200}$
5. Find the length of the edge of the given cube. Mind the convention on measured sizes.
- $V = 88,0 \text{ cm}^3$
 - $V = 100,0 \text{ cm}^3$
 - $V = 999,0 \text{ cm}^3$
 - $V = 10\,000 \text{ cm}^3$
6. Which set of numbers is represented in the chart? Express the set of numbers using inequalities.
- a. 
- b. 
- c. 
- d. 
7. The lengths of two line segments are $a = 2,4 \text{ cm}$ and $b = 1,6 \text{ cm}$. Find the length of line segment x by means of construction. Check by means of calculation.
- $x = \sqrt{a^2 + b^2}$
 - $x = \sqrt{a^2 - b^2}$
 - $x = \sqrt{\frac{a^2}{4} + b^2}$
 - $x = \sqrt{9a^2 - 4b^2}$
 - $x = \sqrt{9a^2 + b^2}$
 - $x = \sqrt{4a^2 - \frac{b^2}{4}}$

Vocabulary

Englisch	Deutsch
square	Quadrat
bound	Schranke
line segment	Strecke
convention on measured sizes	Vereinbarung über gemessene Größen
integer	ganze Zahl
chart	graphische Darstellung
set of numbers	Zahlenmenge
inequality	Ungleichung





Solutions

1. The side lengths are

- | | | | |
|----------|----------|----------|----------|
| a. 27 m | b. 48 m | c. 65 m | d. 35 m |
| e. 6,6 m | f. 9,7 a | g. 114 m | h. 233 m |

2. Possible solutions are:

- | | | | |
|--------|--------|--------|---------|
| a. 4 | b. 4,5 | c. 6,4 | d. 9,9 |
| e. 9,4 | f. 6 | g. 6,9 | h. 10,1 |

Note: These solutions are not unique, others are possible as well.

3. a. $2 \cdot a$ b. $u \cdot v$ c. $5 \cdot c$ d. $3 \cdot x \cdot v$ e. $25 \cdot a$

4. a. $\approx 4,4$ cm b. $\approx 4,6$ cm c. $\approx 10,0$ cm d. $\approx 21,5$ cm

5. Between the bounds lie ...

- a. 3 integers: -1, 0, 1
- b. 1 integer: 0
- c. 9 integers: -4, -3, -2, -1, 0, 1, 2, 3, 4
- d. 4 integers: 11, 12, 13, 14

6. The set of numbers is

- a. $\{x \in \mathbb{R} \mid 1 < x \leq 4\}$
- b. $\{x \in \mathbb{R} \mid -30 < x < 0\}$
- c. $\{x \in \mathbb{R} \mid -3 \leq x \leq 3\}$
- d. $\{x \in \mathbb{R} \mid x \leq 0\}$

7. a. $\approx 2,9$ cm b. $\approx 1,8$ cm c. 2 cm
d. $\approx 6,4$ cm e. $\approx 7,4$ cm f. $\approx 4,7$ cm

