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|  | I Reelle Zahlen, Check-out |  |  |
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Check-out Kapitel I

Schätze dich mithilfe der Checkliste ein.

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|  | Checkliste |  |  |  | Lerntipps | zum Nacharbeiten |
| 1. | Ich kann Quadratwurzeln bestimmen. | 🞎 | 🞎 | 🞎 | Beispiel 1 auf Seite 9 | Seite 10: A7  Seite 25: A1, A2, A9, A10  Seite 29, Runde 1: A1  und Runde 2: A1 |
| 2. | Ich kann quadratische Gleichungen lösen. | 🞎 | 🞎 | 🞎 | Beispiel 2 auf Seite 9 | Seite 11: A18  Seite 25: A5 und A6  Seite 26: A12 und A13 |
| 3. | Ich kann Näherungswerte für Quadratwurzeln bestimmen. | 🞎 | 🞎 | 🞎 | Beispiel 1 auf Seite 12  Beispiel 2 auf Seite 13 | Seite 25: A4, A8 und A11  Seite 29, Runde 2: A3 |
| 4. | Ich kann Zahlen den Zahlenbereichen zuordnen. | 🞎 | 🞎 | 🞎 | Merkkasten auf Seite 17  Beispiel 1 und 2 auf  Seite 17 | Seite 18: A4 und A5  Seite 27: A19  Seite 29, Runde 1: A2 und Runde 2: A2 |
| 5. | Ich kann mithilfe der Rechenregeln für Quadratwurzeln geschickt mit Wurzeln rechnen. | 🞎 | 🞎 | 🞎 | Beispiel 1, 2 und 3 auf  Seite 21 | Seite 22: A6  Seite 24: A22, A23, A24  Seite 26: A14, A15  Seite 29, Runde 1: A3 |

Überprüfe deine Einschätzung.



Zu 1. Quadratwurzeln bestimmen

Welche Ziffer kann man für ◼ einsetzen. Ergänze die fehlende Ziffer.

a) b) c) d)

e) f) g) h)



Zu 2. **Quadratische Gleichungen lösen**

a) Ordne jeder Gleichung eine Lösung zu. Notiere gegebenenfalls weitere Lösungen.

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|  | A |  |  | B |  |  | C |  |  | D |  |  |

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b) Bestimme jeweils die Seitenlänge a des Quadrats, welches denselben Flächeninhalt hat wie die Figuren

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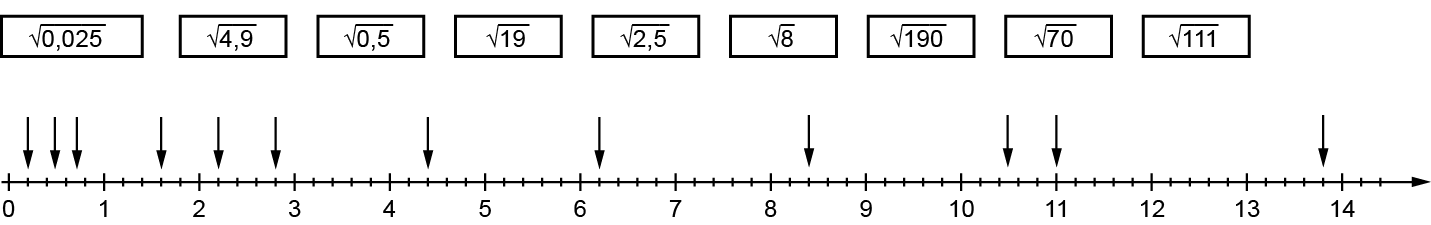
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|  | I Reelle Zahlen, Check-out |  |  |
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Zu 3. Näherungswerte für Quadratwurzeln bestimmen

a) Gib an, welcher Zahl am Zahlenstrahl die Wurzel näherungsweise entspricht, indem du passend verbindest.



b) Bestimme mithilfe einer Intervallschachtelung einen Näherungswert für auf eine Nachkommastelle genau. Verwende die folgende Tabelle.

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| --- | --- | --- | --- | --- | --- |
| 1. Schritt |  | 11 |  | 12 |  |
| 2. Schritt |  |  |  |  |  |
| 3. Schritt |  |  |  |  |  |

Platz für schriftliche Rechnungen:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Damit gilt .



Zu 4. **Zahlen Zahlenbereichen zuordnen**

a) Entscheide, ob die Zahl irrational oder rational ist. Begründe.

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|  | irrational bzw. rational | Begründung |
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| 3,375 842 |  |  |
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|  | I Reelle Zahlen, Check-out |  |  |
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b) Entscheide durch Ankreuzen, zu welchen Zahlenbereichen die Zahl gehört. Forme gegebenenfalls um.

|  |  |  |  |  |
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|  | natürlich | ganz | rational | reell |
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Zu 5. **Geschickt Rechnen mit Quadratwurzeln**

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| a) Vervollständige die Zahlenmauer.  In jedem Stein steht das Produkt der Zahlen auf den beiden Steinen darunter. |  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  | |  |  |  | |  |  |  | |  | |  |  | |  |  | |  | |  | |  | |  | |  | | 2 | |  | | |

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b) Notiere als Vielfaches von , oder und überschlage.

c) Wende das Distributivgesetz an, um den Term zu berechnen bzw. zu überschlagen.

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|  | I Reelle Zahlen, Check-out | Lösungen |  |
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Check-out Kapitel I, S 15 – 17

1 a) b) c) d)

e) f) g) h)

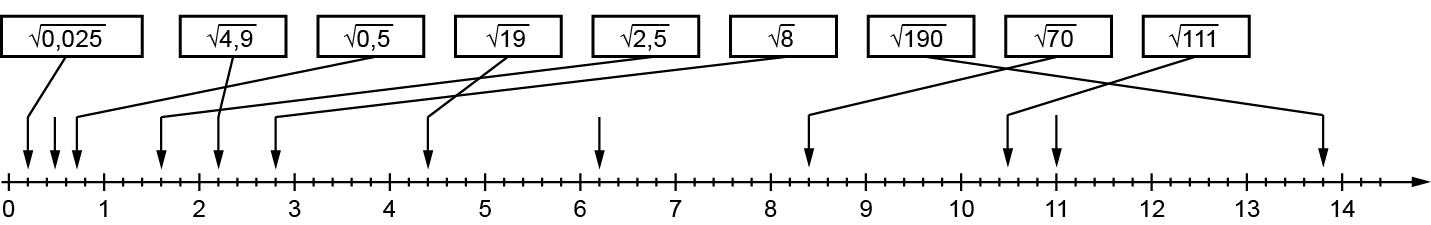
2 a)

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|  | A |  |  | B |  |  | C |  |  | D |  |  |

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b) Parallelogramm: Rechteck: Dreieck:

3 a)



b)

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| 1. Schritt |  | 11 |  | 12 |  |
| 2. Schritt |  | 11,6 |  | 11,7 |  |
| 3. Schritt |  | 11,61 |  | 11,62 |  |

Damit gilt .

4 a)

|  |  |  |
| --- | --- | --- |
|  | irrational bzw. rational | Begründung |
|  | rational | Die Zahl ist als Bruch rational. |
|  | irrational | Die Zahl ist irrational, da der Radikand keine Quadratzahl ist. |
| 3,375 842 | rational | Die Zahl ist rational, da sie endlich viele Nachkommastellen hat. |
|  | rational | Die Zahl ist als Bruch rational. |
|  | rational | Die Zahl ist als periodische Dezimalzahl rational. |

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|  | I Reelle Zahlen, Check-out | Lösungen |  |
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b)

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|  | natürlich | ganz | rational | reell |
|  | X | X | X | X |
|  |  |  | X | X |
|  |  | X | X | X |
|  |  |  | X | X |
|  |  |  |  | X |

5 a)

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