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| **Mathematik in Berufsvorbereitungsklassen** | **BildÜberschriften** |

Aufgabenpool je Basismodul

Anregung für die Gestaltung eines Einstufungstests

2.1 Mathematische Grundstrukturen und Verfahren

2.2 Maßeinheiten

2.3 Dreisatz-, Bruch-, Prozentrechnung

2.4 Geometrische Grundlegen

2.5 Gleichungen und Formeln

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| **2.1 Mathematische Grundstrukturen und Verfahren** |
| 1. | Ergänzen Sie die fehlenden Zahlen.

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| a) | + | 5 | 3 | 8 |  |
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| 1 | 3 | 2 | 8 |  |
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| b) | + |  | 7 | 5 | 3 |
| 2 |  | 7 | 0 |
|  | 4 | 8 |  |  |

 | \_\_\_\_/7 |
| 2. | Mohammed kauft zwei Kasten Limonade für 27,00 Euro und Lebensmittel für 18,00 Euro.Er rechnet im Kopf 30,00 € + 20,00 €.Kreuzen Sie den Betrag an, den er noch einrechnen muss.

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|  | - 4 € |
|  | + 5 € |
|  | - 5 € |
|  | Die Berechnung stimmt |

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| 3. | Setzen Sie die Zahlenfolge fort.1. 3 8 13 \_\_\_\_\_\_\_ 23
2. 45 42 38 33 \_\_\_\_\_\_\_ 20
3. 5 7 30 12 15 17 \_\_\_\_\_\_\_\_
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| 4. | Beantworten Sie mit Hilfe der Tabelle folgende Aufgaben.

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| 301 |  |  |  |  |  | 307 |  |  |  |
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|  | 372 |  |  |  |  |  |  |  |  |
| 381 |  |  |  |  |  |  |  |  |  |
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1. Welche Zahl ist vier Kästchen rechts von 354? \_\_\_\_\_\_\_\_\_
2. Welche Zahl ist fünf Kästchen unterhalb von 311? \_\_\_\_\_\_\_\_\_
3. Tragen Sie die Zahl 372 an der richtigen Stelle in die Tabelle ein.
4. Nennen Sie die größte Zahl der Tabelle. \_\_\_\_\_\_\_\_\_
 | \_\_\_\_/4 |
| 5. | Ordnen Sie die Zahlen der Größe nach. Beginnen Sie mit der kleinsten Zahl.19835 9004 9215 9012 9973 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_/1 |
| 6. | Berechnen Sie.1. Ein Zugticket kostet 8,00 €. Wie viel kosten drei Zugtickets?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. Fünf Flaschen Milch kosten 7,50 €. Wie viel kostet eine Flasche Milch?

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| 7. | Ergänzen Sie die fehlende Zahl.

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| 5 |  | 10 |
| 25 |  | 50 |
| 100 |  | 200 |
| 20 |  |  |
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| 8. | Ayleen möchten mit zwei Freundinnen zu einem Konzert gehen. Eine Karte kostet 27,50 Euro. Wie viel müssen die Mädchen für die Karten bezahlen?

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| **2.2 Maßeinheiten** |
| 1. | Rechnen Sie die Einheiten um.1. 15,00 € = \_\_\_\_\_\_\_\_\_\_\_\_ct
2. 735,00 ct = \_\_\_\_\_\_\_\_\_\_\_\_\_€
3. 200,00 m = \_\_\_\_\_\_\_\_\_\_\_\_\_dm
4. 8,00 kg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_g
5. 4,0 h = \_\_\_\_\_\_\_\_\_\_\_\_min
 | \_\_\_\_/5 |
| 2. | Rechnen Sie die Maßeinheiten um.1. 34,00 m² = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_dm²
2. 500,00 mm² = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_m²
3. 60,00 cm³ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_m³
4. 7,35 dm³ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mm³
 | \_\_\_\_/4 |
| 3. | Ein Schreiner sägt von einem 3,50 m langen Balken ein 14,00 dm langes Stück ab. Welche Länge bleibt übrig?

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| 4. | Vergleichen Sie die Aussagen mit dem Bild und kreuzen Sie an.

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|  |  | richtig | falsch |
| a) | Das Fenster ist breiter als die Tür. |  |  |
| b) | Der Kleiderschrank ist kürzer als das Bett. |  |  |
| c) | Der Schreibtisch ist länger als die Breite der Tür. |  |  |
| d) | Der Schreibtisch ist breiter als die Tür. |  |  |

 | \_\_\_\_/4 |
| 5. | Schätzen Sie die Maße.1. Ein Auto ist ungefähr \_\_\_\_\_\_\_\_ m lang.
2. Ein Briefumschlag ist ungefähr \_\_\_\_\_\_\_\_cm lang.
3. Ein Handy ist ungefähr \_\_\_\_\_\_\_\_mm lang.
4. Ein DIN A4 Schulheft ist ungefähr \_\_\_\_\_\_\_\_ dm lang.
 | \_\_\_\_/4 |
| 6. | Setzen Sie die Zeichen $<, > oder =$ ein.1. 2,750 km \_\_\_\_\_\_ 2750 m
2. 3,0 h \_\_\_\_\_\_ 210,0 min
3. 2 h 15 min \_\_\_\_\_\_ 135 min
4. 340,0 g \_\_\_\_\_\_ 3,40 kg
5. 3,0 l \_\_\_\_\_\_ 30,0 dm³
6. 280,00 ct \_\_\_\_\_\_ 28,00 €
 | \_\_\_\_/6 |
| 7.  | Farhad kauft für eine große Grill-Party Fleisch. Er kauft zusammen 3,2 kg Rindfleisch, 840 g Putenfleisch, 1,250 kg Hähnchenfleisch und 0,350 kg Lammfleisch ein. Wie viel kg Fleisch kauft er insgesamt?

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| 8. | Annas Unterricht endet um 13:00 Uhr. Sie muss 12 Minuten zur Bushaltestelle gehen. Anschließend fährt sie 25 Minuten mit dem Bus. Von der Bushaltestelle zu ihrer Wohnung benötigt sie nochmal 6 Minuten. Wann kommt sie daheim an?

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| 9. | Ergänzen Sie die fehlenden Längen.1. 3200,00 m + \_\_\_\_\_\_\_\_\_\_\_\_ = 5,0 km
2. 3200,00 dm + \_\_\_\_\_\_\_\_\_\_\_\_ = 5,0 km
3. 1,378 km + \_\_\_\_\_\_\_\_\_\_\_\_ = 5,0 km
4. 840,00 dm + \_\_\_\_\_\_\_\_\_\_\_\_ = 5,0 km
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| **2.3 Dreisatz-, Bruch-, Prozentrechnung** |
| 1. | Sie haben eine Rundreise geplant. Ihre Reiseroute ist 3400,0 km lang. Die ersten 50,0 % der Strecke legen Sie mit dem Flugzeug zurück. Weitere 20,0 % mit einem Bus. Anschließend fahren Sie 25,0 % mit einem Schiff. Die letzten 5,0 % fahren Sie mit dem Zug. Wie viele Kilometer sind Sie jeweils mit den einzelnen Transportmitteln gefahren?Flugzeug: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Bus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Schiff: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Zug: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_/4 |
| 2. | Ordnen Sie folgende Fachbegriffe Grundwert, Prozentwert und Prozentsatz den Werten im Text zu.*40,0 % von 200,00 Euro sind 500,00 Euro.*40,0 % \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_200,00 Euro \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_500,00 Euro \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_/3 |
| 3. | Ordnen Sie folgende Fachbegriffe Grundwert, Prozentwert und Prozentsatz den Werten im Text zu.*Aleksandar möchte sich eine Jeans kaufen. Da die Hose 75,00 Euro kostet, wartet er bis sie um 30,0 % reduziert ist. Er bezahlt nun nur noch 52,50 Euro.*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_/3 |
| 4. | Berechnen Sie jeweils den Grundwert G.1. p = 12,5 %, W = 12,50 €
2. p = 27,0 % W = 65,0 kg
3. p = 86,0 % W = 75,0 cm

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| 5. | In einem Klassenzimmer sind 60,0 % aller Plätze belegt. Das sind 18 Sitzplätze. Wie viele Plätze gibt es insgesamt in diesem Zimmer?

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| 6. | Ein Auszubildender muss monatlich 73,70 Euro für seine Fahrkarte ausgeben. Dies entspricht 15,0 % seines Gehaltes. Berechnen Sie das Gehalt des Auszubildenden.

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| 7. | Beim Kauf eines Gebrauchtwagens verhandeln Sie hart und erhalten deshalb einen Nachlass von 1380,00 €. Das entspricht 40,0 % des Neupreises. Wie hoch war der ursprüngliche Preis des Autos?

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| 8. | Berechnen Sie den Anteil der gefärbten Fläche in Prozent.

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 | \_\_\_\_/3 |
| 9. | Berechnen Sie den Anteil der gefärbten Fläche in Prozent.

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 | \_\_\_\_/3 |
| 10. | Färben Sie die Kästchen so ein, dass der Anteil der gefärbten Fläche 25,0 % der Gesamtfläche ergibt.

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 | \_\_\_\_/1 |
| 11. | Färben Sie die Kästchen so ein, dass der Anteil der gefärbten Fläche 45,0 % der Gesamtfläche ergibt.

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 | \_\_\_\_/1 |
| 12. | Berechnen Sie jeweils den Prozentsatz.1. W = 12,0 km G = 60,0 km
2. W = 65,0 ha G = 350,0 ha
3. W = 5,0 l G = 27,0 l

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 | \_\_\_\_/3 |
| 13. | Berechnen Sie jeweils den Prozentsatz.1. W = 35,0 cm G = 5,0 dm
2. W = 2,0 kg G = 3500,0 g
3. W = 30,0 s G = 40,0 min

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 | \_\_\_\_/6 |
| 14. | 320 Jungen und 430 Mädchen sind Schüler einer Berufsschule. Berechnen Sie den Anteil der Mädchen in Prozent.

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 | \_\_\_\_/3 |
| 15. | In einem Kinosaal sind 250 Sitzplätze. Am Tag vor der Filmvorführung sind noch 175 Plätze frei. Wie viel Prozent der Sitzplätze sind bereits reserviert worden?

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 | \_\_\_\_/3 |
| 16. | Ein Bäcker kauft Mehl für 322,00 Euro. Er zahlt 8,0 % weniger als bei seinem letzten Einkauf. Wie viel Geld hat er früher für die gleiche Menge Mehl bezahlt? Wie hoch ist seine Ersparnis?

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 | \_\_\_\_/5 |
| 17. | Bei einem Winter-Sale wird eine Jacke um 10,0 % reduziert angeboten. Leider wird sie immer noch nicht verkauft, deshalb bietet der Verkäufer sie nochmals um 30,0 % günstiger an. Nun kostet die Jacke 126,00 Euro. Wie viel hat die Jacke ursprünglich gekostet?

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 | \_\_\_\_/5 |
| 18. | In Lisas Klasse sind 30 Schülerinnen und Schüler. 60,0 % davon fahren mit dem Fahrrad, alle anderen benutzen den Bus.Wie viele Schülerinnen und Schüler fahren mit dem Fahrrad zur Schule?

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 | \_\_\_\_/3 |
| 19. | Eine Auszubildende hat ihre Abschlussprüfung gemacht und freut sich über ihr erstes Gehalt. Sie hat ein Bruttoeinkommen von 1950,00 Euro. Davon zahlt sie 24,0 % Lohnsteuer und außerdem 9,0 % von der Lohnsteuer als Kirchensteuer.1. Wie viel Lohnsteuer muss sie zahlen?
2. Wie viel Kirchensteuer muss sie zahlen?

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| 20. | Verbinden Sie die Begriffe der Prozentrechnung mit den entsprechenden Fachbegriffen der Zinsrechnung.

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| Prozentwert |  | Zinssatz |
| Grundwert |  | Zinsen |
| Prozentsatz |  | Kapital |

 | \_\_\_\_/3 |
| 21. | Ordnen Sie die Fachbegriffe Zinsen, Kapital und Zinssatz den Werten im Text zu.*Malik hat 500,00 Euro gespart und erhält 22,50 Euro Zinsen zu einem Zinssatz von 4,5 %.*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_/3 |
| 22. | Berechnen Sie die Zinsen.1. Kapital = 1200,00 € Zinssatz = 1,9 %
2. Kapital = 4000,00 € Zinssatz = 4,5 %
3. Kapital = 5600,0 € Zinssatz = 7,3 %

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 | \_\_\_\_/3 |
| 23. | Berechnen Sie die Zinsen, beachten Sie dabei, dass Jahres, Monats- und Tageszinsen berechnet werden sollen.

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|  | Kapital |  | Zinssatz |  | Zeit |
| a) | 2800,00 € |  | 2,6 % |  | 95,0 Tage |
| b) | 760,00 € |  | 5,2 % |  | 3,0 Monate |
| c) | 350,00 € |  | 4,1 % |  | 3,0 Jahre |

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 | \_\_\_\_/9 |
| 23. | Berechnen Sie die fehlenden Werte.

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|  | Kapital | p (%) | Jahreszins |
| a) | 3500,00 € | 2,4 % |  |
| b) |  | 1,9 % | 349,56 € |
| c) | 1900,00 € |  | 120,00 € |
| d) | 2390,00 € | 0,8 % |  |
| e) |  | 8,9 % | 98,00 € |

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 | \_\_\_\_/10 |
| 24. | Sabrina möchte sich gerne ein Auto kaufen und leiht sich deshalb 1200,00 Euro von der Bank. Die Bank gewährt ihr einen Zinssatz von 3,6 %. Sabrina möchte das Geld innerhalb von zwei Jahren zurückzahlen. Wie viel muss sie monatlich bezahlen?

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 | \_\_\_\_/4 |
| 25. | Carolina leiht sich 100,00 Euro zu einem Zinssatz von 2,5 %. Wie viel Zinsen muss sie bezahlen?

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 | \_\_\_\_/1 |
| 26. | Es werden 1200,00 Euro für einen Zeitraum von 8,0 Monate angelegt. Wie hoch war der Zinssatz, wenn man 25,50 Euro Zinsen erhält?

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 | \_\_\_\_/2 |
| 27. | Berechnen Sie das Startkapital wenn die Zinsen von 5,2 % nach 265,0 Tagen 0,80 Euro betragen.

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 | \_\_\_\_/3 |
| 28. | Berechnen Sie die fehlenden Werte.

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| Pizza | Preis (€) |
| 4 | 48 |
| 1 | 12 |
| 3 | ? |
|  |  |
| Semmel | Preis (€) |
| 5 | 9 |
| 1 | ? |
| 3 | ? |

|  |  |
| --- | --- |
| Benzin /Liter | Weg / Kilometer |
| 8 | 240 |
| 1 | ? |
| 23 | ? |

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| --- | --- |
| Arbeitsstunden | Lohn |
| 10 | 95 |
| 1 | ? |
| 40 | ? |
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 | \_\_\_\_/8 |
| 29. | 15 Mitarbeiter brauchen 40 Stunden um ein Lager umzuräumen. Wie viel Zeit benötigen 12 Mitarbeiter für dieselbe Arbeit?

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 | \_\_\_\_/3 |
| 30. | Eine Klasse einer bayerischen Berufsschule möchte einen Ausflug machen. Als Schulklasse erhalten sie einen vergünstigten Gesamtpreis von der Bahn. Der Preis beträgt bei 25 Schülerinnen und Schüler 20,00 Euro pro Person.Fünf Schülerinnen und Schüler können nicht mitfahren. Wie viel muss jeder bezahlen?

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 | \_\_\_\_/3 |
| 31 | Eine Druckmaschine druckt in 10 Stunden 320 Zeitungen. Wie lange benötigt die Maschine für 480 Zeitungen?

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 | \_\_\_\_/3 |
| 32. | 500,00 g Fleisch kosten in der Metzgerei 6,80 Euro. Sie kaufen 800,00 g. Wie viel müssen Sie bezahlen?

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 | \_\_\_\_/3 |
| 33. | Eine 75,00 km lange Straße soll saniert werden. Die Arbeiter haben für 30,00 km 27,00 Stunden gebraucht. Wie lange brauchen sie für die gesamte Strecke?

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 | \_\_\_\_/3 |
| 34. | Ahmed und Paula kaufen Stifte für die Schule. Drei Stifte kosten 2,85 Euro. Ahmed kauft vier Stifte und Paula sechs Stifte. Wie viel bezahlen Ahmed und Paula?

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 | \_\_\_\_/3 |
| 35. | Vier Arbeiter streichen eine Wohnung in neun Stunden. Wie viel Stunden benötigen drei Maler für die gleiche Wandfläche?

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 | \_\_\_\_/3 |
| 36. | Ein Hamburger kostet 3,40 Euro. Wie viel kosten drei Hamburger?

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 | \_\_\_\_/3 |
| 37. | Beschriften Sie die angegebene Bruchzahl mit den Fachbegriffen Zähler, Nenner und Bruchstrich.$$\frac{3}{4}$$ | \_\_\_\_/3 |
| 38. | Setzen Sie die Fachbegriffe Zähler, Nenner und Bruchstrich in den Lückentext ein.Beim Pizzaessen übe ich die Bestandteile eines Bruches für meinen Matheunterricht. Ich teile meine Pizza in vier gleich große Teile. Die Anzahl dieser Teile heißt \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Ich esse gleich zwei Stück davon. Die Anzahl derjenigen Teile, die ich gegessen habe, notiere ich dann (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). Die beiden Zahlen werden voneinander durch eine Linie getrennt (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). | \_\_\_\_/3 |
| 39. | Verbinden Sie die Bilder mit den passenden Bruchzahlen.

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| a) |

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 |  | $$\frac{1}{4}$$ |
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| b) |

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 |  | $$\frac{2}{5}$$ |
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 | \_\_\_\_/4 |
| 40. | Geben Sie den farbig markierten Bruchteil als Brauchzahl an.

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| a) |

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| b) |  | \_\_\_\_\_\_\_\_\_\_ |
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| d) |  | \_\_\_\_\_\_\_\_\_\_ |

 | \_\_\_\_/4 |
| 41. | Verbinden Sie die Fachbegriffe mit den passenden Beispielen.

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| a) | Unechter Bruch |  | $$\frac{3}{6}$$ |
|  |  |  |  |
| b) | Echter Bruch |  | $$\frac{8}{3}$$ |
|  |  |  |  |
| c) | Gemischte Zahl |  | $$2\frac{1}{4}$$ |

 | \_\_\_\_/3 |
| 42. | Tragen Sie die Bruchzahlen in die Stellenwerttafel ein.1. 1,342
2. 101,630
3. 32,004
4. 0,054
5. 99,03

|  |  |  |  |  |  |  |  |
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|  | Hunderter | Zehner | Einer | , | Zehntel | Hundertstel | Tausendstel |
| a) |  |  |  | , |  |  |  |
| b) |  |  |  | , |  |  |  |
| c) |  |  |  | , |  |  |  |
| d) |  |  |  | , |  |  |  |
| e) |  |  |  | , |  |  |  |

 | \_\_\_\_/5 |
| 43. | Lisa fährt zur Berufsschule. Von ihrem Wohnort zur Schule sind es 24,3 km. Sie muss jeden Tag hin und zurück fahren. Ihr Schulblock dauert drei Wochen. Wie viele Kilometer fährt sie insgesamt?

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 | \_\_\_\_/2 |
| 44. | Ahmed hat einen Nebenjob. Er verdient 11,35 Euro in der Stunde. Er kann 7,5 Stunden pro Tag arbeiten. Wie viel verdient er, wenn er zwei Wochen in den Sommerferien arbeitet?

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 | \_\_\_\_/2 |
| 45. | Anna möchte sich gerne einen neuen Laptop kaufen. Er kostet 499,99 Euro. Sie hat schon 245,50 Euro gespart und ihre Eltern schenken ihr noch 120,30 Euro. Wie viel Geld braucht sie noch?

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 | \_\_\_\_/2 |
| 46. | Thomas muss drei Kuchen backen. Für jeden Kuchen braucht er 0,5 l Milch, 1,2 kg Mehl und $\frac{3}{4}$ kg Zucker. Wie viel Kilo wiegt der Kuchenteig?

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 | \_\_\_\_/3 |
| 47. | Tragen Sie die Bruchzahlen auf dem Zahlenstrahl ein.

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 | \_\_\_\_/3 |
| 48. | Wandeln Sie die unechten Brüche in gemischte Zahlen um.Beispiel: $\frac{3}{7} = 2 \frac{1}{3}$

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| a) | $$\frac{12}{3} =$$ | \_\_\_\_\_\_\_\_\_\_\_ |
| b) | $$\frac{21}{5} =$$ | \_\_\_\_\_\_\_\_\_\_\_ |
| c) | $$\frac{37}{5} =$$ | \_\_\_\_\_\_\_\_\_\_\_ |
| d) | $$\frac{5}{2} =$$ | \_\_\_\_\_\_\_\_\_\_\_ |

 | \_\_\_\_/4 |
| 49. | Erweitern und kürzen Sie die Bruchzahlen mit dem angegebenen Faktor.

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| a) | Erweitern mit 2 |  |
|  | $$\frac{3}{4}=$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | $$\frac{4}{7}=$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| b) | Erweitern mit 5 |  |
|  | $$\frac{6}{8}=$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | $$\frac{14}{23}=$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| c) | Kürzen mit 3 |  |
|  | $$\frac{15}{18}=$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | $$\frac{21}{27}=$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

 | \_\_\_\_/6 |
| 50. | Tragen Sie die passenden Ziffern in die Kästchen ein.

|  |  |  |  |  |  |  |  |  |  |  |
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| a) | 6 | = |  |  | d) | 2 | 1 | = | 2 |  |
| 9 | 36 |  | 2 | 4 |
|  |  |  |  |  |  |  |  |  |  |  |
| b) | 3 | = | 9 |  | e) | 56 | = |  |  |  |
| 5 |  |  | 88 | 11 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| c) | 15 | = | 3 |  |  |  |  |  |  |  |
| 25 |  |  |  |  |  |  |  |  |

 | \_\_\_\_/5 |
| 51. | Berechnen Sie.

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| a) | $$\frac{3}{4} + \frac{2}{5} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| b) | $$\frac{7}{10} - \frac{3}{30} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| c) | $$2\frac{1}{2} ∙ 4\frac{1}{5} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| d) | $$6\frac{3}{4} : \frac{5}{16} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

 | \_\_\_\_/4 |
| 52. | Berechnen Sie.

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| a) | $$\frac{3}{10} + \frac{4}{10} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| b) | $$\frac{12}{15} - \frac{3}{15} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| c) | $$2\frac{1}{3} - 1\frac{1}{3} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| d) | $$\frac{6}{8} ∙ \frac{2}{4} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| e) | $$2\frac{1}{2} ∙ \frac{3}{4} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| f) | $$\frac{7}{3} : \frac{14}{9} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

 | \_\_\_\_/6 |
| 53. | Geben Sie die Brüche als Dezimalzahlen an.

|  |  |  |
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| a) | $$\frac{6}{10} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| b) | $$\frac{6}{25} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| c) | $$\frac{4}{5} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| d) | $$\frac{6}{200} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| e) | $$\frac{12}{125} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

 | \_\_\_\_/5 |
| 54. | Geben Sie die Dezimalzahlen als Bruch an.

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| a) | 0,45 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| b) | 2,034 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| c) | 7,2 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| d) | 18,40 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

 | \_\_\_\_/8 |
| 55. | Geben Sie die Brüche als Dezimalzahlen an.

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| a) | $$\frac{4}{10} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| b) | $$\frac{28}{10} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| c) | $$\frac{25}{100} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| d) | $$\frac{825}{100} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| e) | $$\frac{3}{1000} =$$ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

 | \_\_\_\_/5 |
| 56. | Berechnen Sie.

|  |  |  |
| --- | --- | --- |
| a) | 1,4 + 0,002 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| b) | 26,040 – 14,32 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| c) | 3,21 $∙$ 4,2 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| d) | 23,10 : 5 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| e) | 56,6676 : 17,49 = | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| **2.4 Grundkenntnisse der Geometrie** |
| 1. | Beschriften Sie den Quader mit den Fachbegriffen aus dem Kasten.

|  |
| --- |
| Länge l Kante a Breite bKante b Kante c Höhe h |

 | \_\_\_\_/3 |
| 2. | Die Punkte A, B, C und D ergeben eine geometrische Figur.Benennen Sie diese mit ihrem Fachbegriff.Spiegeln Sie die Punkte A,B, C und D an der vorgegebenen Spiegelachse und verbinden diese.Fachbegriff: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_/6 |
| 3. | Zeichnen Sie in ein kartesisches Koordinatensystem folgende Punkte ein.A(2|5), B(3|1), C(6|4)C:\Users\di52xef\Documents\BIK\Mathe\Aufgaben Einstufungstest\Koordinatensystem.PNG | \_\_\_\_/3 |
| 4. | Gegeben sind drei Körpernetze. Entscheiden Sie, welches dieser Netze einen aufgeklappten Würfel ergibt.

|  |  |  |
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| a) | b) | c) |
|  |  |  |

 | \_\_\_\_/1 |
| 5. | Berechnen Sie die fehlenden Maße eines Rechtecks.1. a = 15,0 mm b = 12,0 mm gesucht: A
2. a = 4,0 cm A = 20,0 cm² gesucht: b
3. b = 4,0 km A = 12,0 km² gesucht: a

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| 6. | Berechnen Sie das Volumen eines Quaders mit den Seitenlängen a = 5,0 cm; b = 3,0 cm und c = 6,0 cm.

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| 7. | Berechnen Sie die Länge a eines Rechteckes mit der Breite b = 3,0 cm und der Fläche 24,0 cm².

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 | \_\_\_\_/3 |
| 8. | Das unten dargestellte Grundstück soll mit einem Zaun umrandet werden. Berechnen Sie, wie viele Meter Zaun benötigt werden.20,050,040,025,0 Die Maße sind in Meter angegeben.

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| 9. | Verbinden Sie die geometrischen Körper mit den dazu passenden Flächenformeln.

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|  |  | $$A = \frac{a ∙ b}{2}$$ |
|  |  | $$A = r^{2} ∙ π$$ |
|  |  | $$A = \frac{a + c}{2} ∙ h$$ |
|  |  | $$A = a ∙ b$$ |
|  |  | $$A = a ∙ h\_{a}$$ |
|  |  | $$A = a^{2}$$ |

 | \_\_\_\_/3 |
| 10. | Ante möchte einen neuen Teppich in seinem Zimmer verlegen. Der Preis des Teppichs liegt bei 15,50 Euro/m².Berechnen Sie die Kosten des Teppichs mit Hilfe der gegebenen Zimmermaße.270410Die Maße sind in Zentimeter angegeben.

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| 11. | Marcel macht ein Praktikum in einer Firma für Lagerlogistik. Seine erste Aufgabe ist es, Transportkisten in einen LKW zu laden.Um zu wissen, wie viele Kisten in den LKW passen, muss er zunächst das Volumen einer einzelnen Kiste berechnen. Eine Kiste ist 0,85 cm lang, 0,45 cm breit und 6,0 dm hoch.Berechnen Sie das Volumen der Kiste.

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| 12. | Ein Benzintank hat folgende Maße:Länge a = 40 cm, Breite b= 30 cm, Höhe c = 25 cm.Berechnen Sie die Menge an Benzin, die in den Tank passt.

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| **2.5 Formeln und Gleichungen** |
| 1. | Berechnen Sie die Lösungen für x.1. 3x = 15 x = \_\_\_\_\_\_\_\_\_\_
2. 25 + 2x = 49 x = \_\_\_\_\_\_\_\_\_\_
3. 3,4 + 5:2 + x = 7,5 x = \_\_\_\_\_\_\_\_\_\_

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 | \_\_\_\_/6 |
| 2. | Kreuzen Sie die richtige Gleichung zur Textaufgabe an.Daniel fährt mit seinem Freund ins Kino. Die Eintrittskarte für das Kino kostet je 9,50 Euro, sein Zugticket kostet 3,50 Euro und die Busfahrkarte für seinen Freund kostet 2,80 Euro. Er bezahlt alles mit einem 50 Euro-Schein. Wie viel bekommt er zurück?

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|  |  | $$2 ∙ 9,50 € + 3,50 € + 2,80 € + x = 50,00 €$$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | $$9,50 € + 9,50 € + 2,80 € + 3,50 € = 50,00 € - x$$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | $$2 ∙( 9,50 € + 3,50 € + 2,80 €) = 50,00 € ∙ x$$ |

 | \_\_\_\_/1 |
| 3. | Entscheiden Sie, ob die Umformung der Gleichung richtig (R) oder falsch (F) ist.$$3\left(2x + 5\right) - 4 = 29$$

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|  |  | R/F |
| a) | $$3 + 2x + 5 - 4 = 29$$ |  |
| b) | $$6x + 15 - 4 = 29$$ |  |
| c) | $$5x + 8 - 4 = 29$$ |  |

 | \_\_\_\_/1 |
| 4. | Setzen Sie die Klammern so, dass als Lösung x = 0,25 gilt.$$5 + 2 ∙ x + 5 - 2 ∙ x + 3 = 20$$ | \_\_\_\_/2 |
| 5. | Kreuzen Sie die richtige Lösung an. $6 - x + 3 : 1,5 = 10$

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|  |  | $$x = 3,5$$ |
|  |
|  |  | $$x = -3,5$$ |
|  |
|  |  | $$x = 14,5$$ |
|  |
|  |  | x = -14,5 |

 | \_\_\_\_/1 |
| 6. | Stellen Sie folgenden Text als mathematische Gleichung dar.Addieren Sie 15 zu einer Zahl und ziehen davon 20 ab, dann erhalten Sie 94.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_/3 |
| 7. | Geben Sie die Lösung für x an.$$-\left(10x - 20\right) - 5\left(2x + 5\right) = 30$$

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 | \_\_\_\_/3 |
| 8. | Kreuzen Sie die richtige mathematische Gleichung zur Textaufgabe an.Multiplizieren Sie die Summe der Zahlen 5x und 10 mit 3, so erhalten Sie den Quotienten der Zahlen 45 und 5.

|  |  |  |
| --- | --- | --- |
|  |  | $$3 ∙ 5x ∙ 3 = 45 - 5$$ |
|  |
|  |  | $$3(5x + 10) = 45 - 5$$ |
|  |
|  |  | $$3(10 + 5x) = 45 : 5$$ |
|  |

 | \_\_\_\_/1 |
| 9. | Ergänzen Sie die fehlenden Rechenschritte.$$4,5\left(x + 4\right) - 3\left(2x - 4\right) = 20$$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$$-1,5x + 30 = 20$$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$$x = 6,66$$ | \_\_\_\_/4 |
| 10. | Suchen Sie den Fehler in der Rechnung und korrigieren Sie diesen.$$-8x - 10\left(2x - 4\right) = -16x + 8:2$$$$-8x - 20x - 40 = -16x + 4$$$$-28x + 40 = -16x + 4$$$$-44x = -36$$$$x = 3$$ | \_\_\_\_/2 |