2 Linear Equations

Englische Aufgaben zum Kapitel 2 Lineare Gleichungen

2.1 Charles thinks of a number. He adds 148 and divides the result by 13. What number does Charles start with to get an answer of 12?

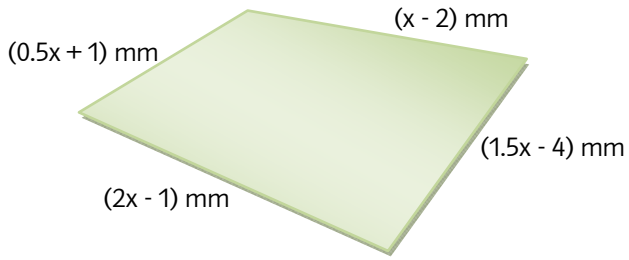
2.2 Julia thinks of a number which she multiplies by 2 and then subtracts 97. The answer is 415. What is her number?

2.3 Three packages have the following weights:
(k - 3) kilograms 2k kilograms (3k + 5) kilograms

a. Write an expression, in terms of k, for the total weight of the three packages.
b. The three packages have a total weight of 32 kilograms. Form an equation and find the weight of the heaviest package.

[equation ... Gleichung]

2.4 The lengths of a quadrangle are given.



a. Write down a simplified expression, in terms of x, for the perimeter of the quadrangle.
b. The perimeter is 34 mm. Write down an equation to find the value of x.
c. Use your answer to calculate the length of each side of the quadrangle.

[quadrangle ... Viereck; simplified ... vereinfacht; perimeter... Umfang]

2.5 Sunny is twice as old as Lucas. There ages add up to 42. How old is Sunny?
[twice ... doppelt]

2.6 Simon has m DVDs in his collection. His friend Brian has three times as many DVDs as Simon. Both purchase another 5 DVDs. Now Brian has twice as many DVDs as Simon.
Write down an expression, in terms of m, for the number of DVDs Brian has now.
Form an equation and solve it to find how many DVDs Simon has now.

2.7 The first three weeks in June Christian worked for t hours each week. In the fourth week he worked for an extra 15 hours. In total he worked 175 hours in June. By setting up an equation, work out
a. the value of t
b. the number of hours that Christian worked in June.

2.8 At the market one kilogram of bananas costs five times as much as one kilogram of raspberries. For 14.70 € you can buy 5 kilograms of bananas and 2 kilograms of raspberries. Work out the cost of one kilogram of bananas.
[raspberry ... Himbeere]

2.9 Mel saved all the money she earned for her summer job at a local supermarket. From her savings of $ 433 she spent $ 21 on a computer game and $ 148 on clothes. What percentage of her savings did she spend?
[local ... örtlich; savings ... Ersparnisse; percentage ... Prozentsatz]

2.10 A bottle of orange juice contains 750 ml. A special offer bottle contains an extra 20%. How many millilitres of orange juice are in the special offer bottle?

2.11 In his final exams Michael achieved the following results:

English	72 out of 96
Maths	12 out of 20
Chemistry	36 out of 45

Calculate in which subject he did best.

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2.12 The population of Oregon increased from 3 421 399 in 2000 to 3 831 074 at the 2010 United States Census. Find the percentage increase in the population.
[population ... Bevölkerung; increase ... zunehmen, Zuwachs; (decrease … abnehmen, Abnahme); census … Volkszählung]

2.13 The current men's 100 metres world record is 9.58 seconds, set by Jamaica's Usain Bolt. Bolt's speed is about 32% of the maximum speed of a running cheetah. Calculate the cheetah's maximum speed.
[current ... aktuell; cheetah ... Gepard]

2.14 Lisa puts £ 1580 she has won in the lottery into a bank account. At the end of the first year 1.2% interest is added. Calculate how much money is in her account at the end of the first year.
[bank account ... Bankkonto; interest ... Zinsen]

2.15 A tailor's bill is 427 € before Value Added Tax (VAT), which is charged at a rate of 20%, is added. Work out what the bill will be after VAT has been added.
[tailor ... Schneider; Value Added Tax ... Mehrwertssteuer]

2.16 Convert 30° Centigrade to Fahrenheit using the formula: $C = (F - 32) \div 1.8$

2.17 Rearrange the formulae to give b in terms of c. $\frac{b+c}{3} + c = b$
[to rearrange ... umformen; in terms of ... bezüglich]

2.18 In football matches the winner is awarded three points and the looser of course no points. For a draw each team is awarded one point. Write down a formula that can be used to calculate the total points awarded to a team.
[to be awarded ... zugesprochen bekommen; draw ... Unentschieden]

2.19 A rectangle has the following measures in centimetres: length - (3c + 7), width - 2c. The radius of a circle is R cm. The areas of the rectangle and the circle are equal. Express R in terms of c.
[rectangle ... Rechteck; area ... Flächeninhalt; equal ... gleich]

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