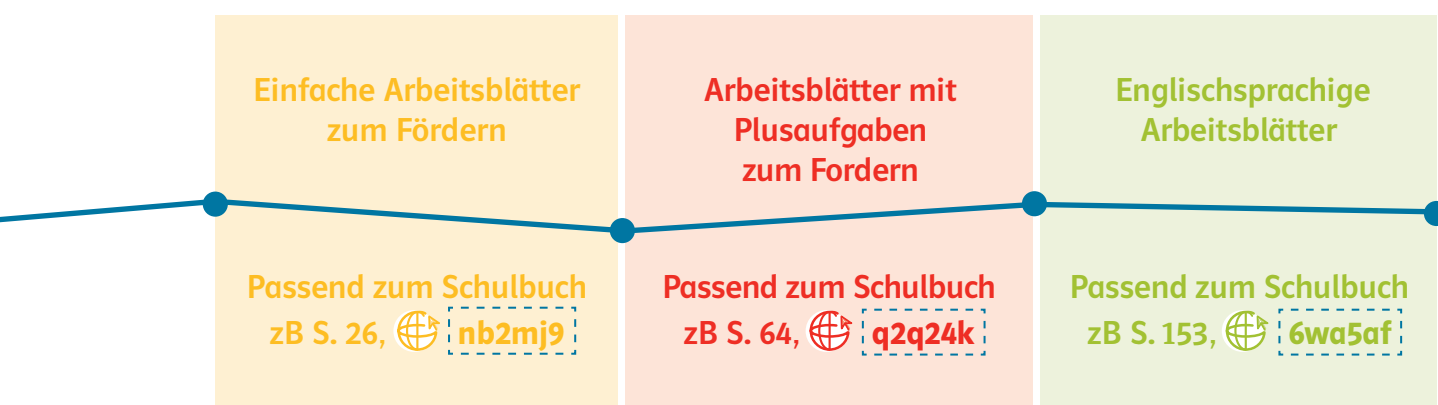


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Wir wissen, es ist nicht leicht individuellen Mathematikunterricht nach den unterschiedlichen Bedürfnissen von Schülerinnen und Schülern zu gestalten. Um Sie bestmöglich in der Unterrichtsgestaltung zu unterstützen, bieten wir Ihnen als besonderen Service viele Materialien zum Fördern und Fordern.

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Das ist Mathematik

Arbeitsblätter **ENGLISCH**

Hier finden Sie Aufgaben in englischer Sprache passend zu den Kapiteln der Neuerscheinung zusammengestellt. Passend zu dem Thema finden Sie auch ein übersichtliches Vocabulary. Es gibt genügend Platz zum Rechnen und Konstruieren. Die Lösungen sind auf einem Blatt – entscheiden Sie, ob diese den Schülerinnen und Schülern gegeben werden sollen.



Englische Übungen zu A - Natürliche Zahlen

1. A number has 6 in the hundreds place, 1 in the millions place, 2 in the tens place, 8 in the hundred-thousands place, 5 in the ones place, 3 in the thousands place and 4 in the tenthousands place. Write the number.
2. In the number 78 965
the 8 stands for _____,
the 6 stands for _____,
the 7 stands for _____,
the 9 stands for _____.
3. In 9 127
9 is worth 9 000,
1 is worth _____,
2 is worth _____,
7 is worth _____.
4. Write the following numbers using digits.
 - a. four hundred eighty-two thousand; one hundred ninety-seven; thirteen; twenty-two million
 - b. twelve thousand; eight million; fifteen thousand; three hundred fifty-four
5. Write the largest number you can using the digits 5, 2, 3, 0, 6, 0 and 4.
6.
 - a. Write down all even numbers between 24 and 38.
 - b. Write down all odd numbers from 45 to 59.
7. Put these numbers in order from smallest to largest: 46 000, 4 600, 40 600, 4 006.
8.
 - a. Name the number halfway between 30 and 40.
 - b. Name the number halfway between 500 and 800.
 - c. Name the number halfway between 300 and 600.
9.
 - a. Is 47 closer to 40 or 50?
 - b. Is 326 closer to 300 or 400?
 - c. Is 572 closer to 500 or 600?





Vocabulary

Englisch	Deutsch
place value	Stellenwert
ones place	Einer(stelle)
tens place	Zehner
hundreds place	Hunderter
thousands place	Tausender
tenthousands place	Zehntausender
hundred-thousands place	Hunderdtausender
million	Million
billion (!)	Milliarde (!)
trillion	Billion
thousand trillion	Billiarde
to be worth	Wert sein
digit	Ziffer
even numbers	gerade Zahlen
odd numbers	ungerade Zahlen
halfway	in der Mitte





Solutions

1. A number has 6 in the hundreds place, 1 in the millions place, 2 in the tens place, 8 in the hundred-thousands place, 5 in the ones place, 3 in the thousands place and 4 in the tenthousands place. **1 843 625**
2. In the number 78 965
the 8 stands for **8 000, (eight thousand)**
the 6 stands for **60, (sixty)**
the 7 stands for **70 000, (seventy thousand)**
the 9 stands for **900. (nine hundred)**
3. In 9 127
9 is worth **9 000, (nine thousand)**
1 is worth **100, (one hundred)**
2 is worth **20, (twenty)**
7 is worth **7. (seven)**
4. Write the following numbers using digits.
 - a. four hundred eighty-two thousand; one hundred ninety-seven; thirteen; twenty-two million.
482 000; 197; 13; 22 000 000
 - b. twelve thousand; eight million; fifteen thousand; three hundred fifty-four.
12 000; 8 000 000; 15 000; 354
5. Write the largest number you can using the digits 5, 2, 3, 0, 6, 0 and 4.
6 543 200
6.
 - a. Write down all even numbers between 24 and 38.
26, 28, 30, 32, 34, 36
 - b. Write down all odd numbers from 45 to 59.
45, 47, 49, 51, 53, 55, 57, 59
7. Put these numbers in order from smallest to largest: 46 000, 4 600, 40 600, 4 006.
4006, 4600, 40 600, 46 000
8.
 - a. Name the number halfway between 30 and 40. **35**
 - b. Name the number halfway between 500 and 800. **650**
 - c. Name the number halfway between 300 and 600. **450**
9.
 - a. Is 47 closer to 40 or 50? **47 is closer to 50**
 - b. Is 326 closer to 300 or 400? **326 is closer to 300**
 - c. Is 572 closer to 500 or 600? **572 is closer to 600**





Englische Übungen zu Rechnen mit natürlichen Zahlen

1. Which amount below is closest to the sum of 2 € 50c, 75c, 3 € 85c and 12 € 70c?
Circle the amount. 5 € 10 € 15 € 20 €

2. A giant tortoise can live about 150 years. An elephant can live about 78 years.
How much longer can a giant tortoise live than an elephant?

3. There are three children in the Smith family: Sarah, Sam, and Sue. Each of the two younger children is half as old as the next older child. The oldest is 16. Sam is not the oldest. Sam is twice as old as Sarah. What is the age of each person?

4.
 - a. Circle the number that is closest to the product of 48 and 21.
10 100 1 000 10 000
 - b. Circle the number that is closest to the product of 41 and 83.
30 300 3 000 30 000

5. Twelve shirts fit into a box. There are 372 shirts to be put into boxes. How many boxes are needed?

6. There are 294 pages in the book Max is reading for his book report. He has two weeks to read the book. About how many pages should he read each day?





7. 286 students, teachers, and parents are going on a trip to the zoo by buses. Each bus holds 52 people. How many buses are needed for the trip?

8. True or false?

- a. $55 = 10 + 5 \cdot 7$
- b. $74 = 4 \cdot 7 + 7 \cdot 6$
- c. $68 = 9 \cdot 4 + 13$
- d. $3 \cdot 5 + 63 : 9 = 34$
- e. $(7 \cdot 4) - 2 = 80 - 9 \cdot 6$
- f. $(8 \cdot 7) : (12 + 2) = 4$
- g. $(6 \cdot 7) : (19 - 5) = 3$
- h. $8 \cdot 5 + 8 \cdot 6 = 8 \cdot 11$

Vocabulary

Englisch	Deutsch
amount	Betrag
sum	Summe
giant tortoise	Riesenschildkröte
true	richtig
false	falsch
circle	einkreisen, Kreis





Solutions

1. Which amount below is closest to the sum of 2 € 50c, 75c, 3 € 85c and 12 € 70c?
Circle the amount. 5 € 10 € 15 € **20 €**
2. A giant tortoise can live about 150 years. An elephant can live about 78 years.
How much longer can a giant tortoise live than an elephant?
A giant tortoise can live 72 years longer than an elephant.
3. There are three children in the Smith family: Sarah, Sam, and Sue. Each of the two younger children is half as old as the next older child. The oldest is 16. Sam is not the oldest. Sam is twice as old as Sarah. What is the age of each person?
Sarah is 4 years old, Sam is 8 years old and Sue is 16 years old.
4.
 - a. Circle the number that is closest to the product of 48 and 21.
10 100 **1 000** 10 000
 - b. Circle the number that is closest to the product of 41 and 83.
30 300 **3 000** 30 000
5. Twelve shirts fit into a box. There are 372 shirts to be put into boxes. How many boxes are needed?
31 boxes are needed.
6. There are 294 pages in the book Max is reading for his book report. He has two weeks to read the book. About how many pages should he read each day?
Max should read about 21 pages each day.
7. 286 students, teachers, and parents are going on a trip to the zoo by buses. Each bus holds 52 people. How many buses are needed for the trip?
6 buses are needed.
8. True or false?
 - a. $55 = 10 + 5 \cdot 7$ **false, because $55 \neq 45$**
 - b. $74 = 4 \cdot 7 + 7 \cdot 6$ **false, because $74 \neq 70$**
 - c. $68 = 9 \cdot 4 + 13$ **false, because $68 \neq 49$**
 - d. $3 \cdot 5 + 63 : 9 = 34$ **false, because $22 \neq 34$**
 - e. $(7 \cdot 4) - 2 = 80 - 9 \cdot 6$ **true, because $26 = 26$**
 - f. $(8 \cdot 7) : (12 + 2) = 4$ **true, because $4 = 4$**
 - g. $(6 \cdot 7) : (19 - 5) = 3$ **true, because $3 = 3$**
 - h. $8 \cdot 5 + 8 \cdot 6 = 8 \cdot 11$ **true, because $88 = 88$**





Englische Übungen zu Dezimalzahlen

Bemerkung: Im Englischen schreibt man einen Punkt als Komma („decimal point“).

1. A number has 6 in the tenths place, 4 in the ones place, and 5 in the hundredths place. Write the number.

2. In 59.378 the 5 stands for 5 tens.
The 9 stands for _____.
The 3 stands for _____.
The 7 stands for _____.
The 8 stands for _____.

3. Round off each number to the nearest tenth.
 - a. 2.34 $\approx$ _____
 - b. 0.68 $\approx$ _____
 - c. 14.35 $\approx$ _____
 - d. 1.62 $\approx$ _____
 - e. 5.99 $\approx$ _____

4. Round off each number to the nearest hundredth.
 - a. 12.368 $\approx$ _____
 - b. 234.989 $\approx$ _____
 - c. 1.225 $\approx$ _____
 - d. 12.304 $\approx$ _____
 - e. 0.550 $\approx$ _____

5. Put these numbers in order from smallest to largest.
 - a. 0.05, 0.5, 0.55, 5.5 _____
 - b. 2.1, 2.01, 20.1, 20.01 _____
 - c. 0.01, 0.10, 0.11, 0.09 _____

6. „What’s green inside, white outside and hops?”

To find the answer, put the numbers in order from smallest to largest.

0.66 1 0.2 1.05 0.90 0.01 0.75 0.35 0.25 0.5 0.05 0.09 5.5
N I O C W A D S G A F R H





7. What numbers come next?

- a. 0.1, 0.9, 1.7, _____, _____
- b. 8, 6.9, 5.8, _____, _____
- c. 5.56, 5.53, 5.5, _____, _____
- d. 7.23, 7.28, 7.33, _____, _____

8. Add 9 tens, 8 hundredths, and 3 tenths to 34.53.
What is the result?

9. True or false?

- a. $35.7 + 22.1 = 57.87$
- b. $2.34 - 0.09 = 2.25$
- c. $(4.6 + 2.9) - 3.1 < 3.7$
- d. $0.20 > 0.68 - (0.42 + 0.11)$
- e. $7.89 - 3.36 = 2.13 + 2.40$
- f. $12.6 - 4.8 = 3.9 + 3.9$

10. Multiply mentally.

- a. $0.8 \cdot 100 =$ _____
- b. $0.03 \cdot 10 =$ _____
- c. $0.27 \cdot 1\,000 =$ _____
- d. $3.3 \cdot 50 =$ _____
- e. $0.4 \cdot 500 =$ _____
- f. $0.25 \cdot 60 =$ _____
- g. $0.03 \cdot 700 =$ _____
- h. $3.52 \cdot 2\,000 =$ _____

11. Victor and his three friends went out to lunch. The total bill was 45.52 €. They decided that each would pay the same amount. How much did each person pay?

12. A shop sells a 4-pack of batteries for 2.40 €. It sells a 6-pack of the same kind for 3.30 €. Which box is the better buy?





13. For each problem below the multiplication has been done, but the decimal point has not been placed in the product. Place the decimal point correctly.

- a. $2.3 \cdot 7.3 = 1\,6\,7\,9$
- b. $5.7 \cdot 4.4 = 2\,5\,0\,8$
- c. $51 \cdot 3.8 = 1\,9\,3\,8$
- d. $0.2 \cdot 5.777 = 1\,1\,5\,5\,4$
- e. $6.91 \cdot 8.2 = 5\,6\,6\,6\,2$
- f. $5.203 \cdot 12.6 = 6\,5\,5\,5\,7\,8$

14. For each problem below the division has been done, but the decimal point is missing in the answer. Place the decimal point correctly.

- a. a) $43.8 : 3 = 1\,4\,6$
- b. $6.46 : 4 = 1\,6\,1\,5$
- c. $4.35 : 5 = 0\,8\,7\,0\,0$
- d. $30.96 : 4.5 = 6\,8\,8$
- e. $298.92 : 6 = 4\,9\,8\,2$
- f. $1\,814.4 : 3.2 = 5\,6\,7\,0$

15. There are six calculations and six answers. Write down each calculation and insert the correct answer from the list given. Use estimation.

- a. $6.9 \cdot 7.1$
- b. $9.8 : 5$
- c. $21 \cdot 10.2$
- d. $0.13 + 15.2$
- e. $3114 : 30$
- f. $4.03 \cdot 1.9$

Answers: 1.96; 15.33; 48.99; 103.8; 7.657; 214.2

16. There are six calculations and six answers. Write down each calculation and insert the correct answer from the list given. Use estimation.

- a. $103.2 : 5$
- b. $7.2 \cdot 7.3$
- c. $4.1 \cdot 49$
- d. $3.57 : 3$
- e. $36.52 : 4$
- f. $1.4 : 10$

Answers: 52.56; 1.19; 9.13; 200.9; 20.64; 0.14





Vocabulary

Englisch	Deutsch
place value	Stellenwert
decimal numbers	Dezimalzahlen
decimal point	Dezimalpunkt (im Englischen schreibt man einen Punkt statt einem Komma)
tenth	Zehntel
hundreth	Hundertstel
thousandth	Tausendstel
value	Wert
round off	runden
265.8 – two hundred sixty-five point eight	Zweihundertfünfundsechzig Komma Acht
result	Ergebnis
to multiply mentally	Kopfrechnen
amount	Betrag
decide	entscheiden
estimation	Abschätzung

Solutions

1. A number has 6 in the tenths place, 4 in the ones place, and 5 in the hundredths place. Write the number.
4,65
2. In 59.378 the 5 stands for 5 tens.
The 9 stands for 9 ones.
The 3 stands for 3 tenths.
The 7 stands for 7 hundredths.
The 8 stands for 8 thousandths.
3. Round off each number to the nearest tenth.
 - a. **2.3**
 - b. **0.7**
 - c. **14.4**
 - d. **1.6**
 - e. **6.0**
4. Round off each number to the nearest hundredth.
 - a. **12.37**
 - b. **234.99**





- c. 1.23
- d. 12.30
- e. 0.55

5. Put these numbers in order from smallest to largest.

- a. $0.05 < 0.5 < 0.55 < 5.5$
- b. $2.01 < 2.1 < 20.01 < 20.1$
- c. $0.01 < 0.09 < 0.10 < 0.11$

6. „What’s green inside, white outside and hops?”

a frogsandwich

7. What numbers come next?

- a. 0.1, 0.9, 1.7, 2.5, 3.3, 4.1
- b. 8, 6.9, 5.8, 4.7, 3.6, 2.5
- c. 5.56, 5.53, 5.5, 5.47, 5.44, 5.41
- d. 7.23, 7.28, 7.33, 7.38, 7.43, 7.48

8. Add 9 tens, 8 hundredths, and 3 tenths to 34.53.

What is the result?

The result is 124.91.

9. True or false?

- a. $35.7 + 22.1 = 57.87$ **false**
- b. $2.34 - 0.09 = 2.25$ **true**
- c. $(4.6 + 2.9) - 3.1 < 3.7$ **false**
- d. $0.20 > 0.68 - (0.42 + 0.11)$ **true**
- e. $7.89 - 3.36 = 2.13 + 2.40$ **true**
- f. $12.6 - 4.8 = 3.9 + 3.9$ **true**

10. Multiply mentally

- a. $0.8 \cdot 100 =$ **80**
- b. $0.03 \cdot 10 =$ **0,3**
- c. $0.27 \cdot 1\,000 =$ **270**
- d. $3.3 \cdot 50 =$ **165**
- e. $0.4 \cdot 500 =$ **200**
- f. $0.25 \cdot 60 =$ **15**
- g. $0.03 \cdot 700 =$ **21**
- h. $3.52 \cdot 2\,000 =$ **7\,040**





11. Victor and his three friends went out to lunch. The total bill was 45.52 €. They decided that each would pay the same amount. How much did each person pay?
Each person paid 11.38 €.
12. A shop sells a 4-pack of batteries for 2.40 €. It sells a 6-pack of the same kind for 3.30 €. Which box is the better buy?
The 6-pack is the better buy. You save 5 Cent per batterie.
13. For each problem below the multiplication has been done, but the decimal point has not been placed in the product. Place the decimal point correctly.
- a. $2.3 \cdot 7.3 = 16.79$
 - b. $5.7 \cdot 4.4 = 25.08$
 - c. $51 \cdot 3.8 = 193.8$
 - d. $0.2 \cdot 5.777 = 1.1554$
 - e. $6.91 \cdot 8.2 = 56.662$
 - f. $5.203 \cdot 12.6 = 65.5578$
14. For each problem below the division has been done, but the decimal point is missing in the answer. Place the decimal point correctly.
- a. $43.8 : 3 = 14.6$
 - b. $6.46 : 4 = 1.615$
 - c. $4.35 : 5 = 0.8700$
 - d. $30.96 : 4.5 = 6.88$
 - e. $298.92 : 6 = 49.82$
 - f. $1814.4 : 3.2 = 567.0$
15. There are six calculations and six answers. Write down each calculation and insert the correct answer from the list given. Use estimation.
- a. $6.9 \cdot 7.1$ **48.99**
 - b. $9.8 : 5$ **1.96**
 - c. $21 \cdot 10.2$ **214.2**
 - d. $0.13 + 15.2$ **15.33**
 - e. $3114 : 30$ **103.8**
 - f. $4.03 \cdot 1.9$ **7.657**
16. There are six calculations and six answers. Write down each calculation and insert the correct answer from the list given. Use estimation.
- a. $103.2 : 5$ **20.64**
 - b. $7.2 \cdot 7.3$ **52.56**
 - c. $4.1 \cdot 49$ **200.9**
 - d. $3.57 : 3$ **1.19**
 - e. $36.52 : 4$ **9.13**
 - f. $1.4 : 10$ **0.14**





Englische Übungen zu Bruchzahlen

1. There are 64 musicians in the school band $\frac{1}{4}$ of them play the flute, $\frac{1}{8}$ play the trombone.

- 1) How many musicians play the flute?
- 2) How many musicians play the trombone?

2. Solve:

a. $\frac{1}{3}$ of 12 is _____

b. $\frac{2}{3}$ of 12 is _____

c. $\frac{3}{4}$ of 36 is _____

d. $\frac{2}{5}$ of 20 is _____

e. $\frac{5}{6}$ of 30 is _____

f. $\frac{5}{8}$ of 32 is _____

g. $\frac{3}{5}$ of 15 is _____

h. $\frac{2}{3}$ of 24 is _____

i. $\frac{3}{8}$ of 48 is _____

3. Write the fractions in order from the smallest to the largest:

a. $\frac{1}{4}, \frac{1}{2}, \frac{1}{9}, \frac{1}{5}, \frac{1}{100}$ _____

b. $\frac{2}{4}, \frac{2}{2}, \frac{2}{9}, \frac{2}{5}, \frac{2}{100}$ _____

c. $\frac{4}{10}, \frac{7}{10}, \frac{4}{5}, \frac{1}{5}, \frac{1}{10}$ _____





4. Mike had 30 baseball-cards. He gave $\frac{1}{5}$ of them to his friend Steven and $\frac{2}{5}$ to his brother Jim.

- 1) How many baseball cards did he give to Steven?
- 2) How many did he give to Jim?
- 3) How many did he keep for himself?

5. Write „<“, „>“ or „=“ to make each statement true.

a. $\frac{5}{6}$ — $\frac{1}{6}$

b. $\frac{6}{8}$ — $\frac{3}{4}$

c. $\frac{1}{8}$ — $\frac{1}{9}$

d. $\frac{3}{4}$ — $\frac{9}{12}$

e. $\frac{2}{3}$ — $\frac{2}{5}$

f. 0,6 — $\frac{2}{3}$

Vocabulary

Englisch	Deutsch
flute	Flöte
trombone	Posaune
Bruch	fraction
Zähler	numerator
Nenner	denominator
Bruchstrich	fraction line
ein Halbes	one half
ein Drittel	one third
ein Viertel	one quarter
ein Fünftel	one fifth
smaller than	<
bigger than	>
equal to	=





Solutions

1. There are 64 musicians in the school band $\frac{1}{4}$ of them play the flute, $\frac{1}{8}$ play the trombone.

1) How many musicians play the flute?

16 musicians play the flute.

2) How many musicians play the trombone?

8 musicians play the trombone.

2. Solve:

a. $\frac{1}{3}$ of 12 is **4**

b. $\frac{2}{3}$ of 12 is **8**

c. $\frac{3}{4}$ of 36 is **27**

d. $\frac{2}{5}$ of 20 is **8**

e. $\frac{5}{6}$ of 30 is **25**

f. $\frac{5}{8}$ of 32 is **20**

g. $\frac{3}{5}$ of 15 is **9**

h. $\frac{2}{3}$ of 24 is **16**

i. $\frac{3}{8}$ of 48 is **18**

3. Write the fractions in order from the smallest to the largest:

a. $\frac{1}{100}, \frac{1}{9}, \frac{1}{5}, \frac{1}{4}, \frac{1}{2}$

b. $\frac{2}{100}, \frac{2}{9}, \frac{2}{5}, \frac{2}{4}, \frac{2}{2}$

c. $\frac{1}{10}, \frac{1}{5}, \frac{4}{10}, \frac{7}{10}, \frac{4}{5}$





4. Mike had 30 baseball-cards. He gave $\frac{1}{5}$ of them to his friend Steven and $\frac{2}{5}$ to his brother Jim.

1) How many baseball cards did he give to Steven?

He gave 6 baseball cards to Steven.

2) How many did he give to Jim?

He gave 12 baseball cards to his brother Jim.

3) How many did he keep for himself?

He kept 12 baseball cards for himself.

5. Write „<“, „>“ or „=“ to make each statement true.

a. $\frac{5}{6} > \frac{1}{6}$

b. $\frac{6}{8} = \frac{3}{4}$

c. $\frac{1}{8} > \frac{1}{9}$

d. $\frac{3}{4} = \frac{9}{12}$

e. $\frac{2}{3} > \frac{2}{5}$

f. $0,6 < \frac{2}{3}$





Englische Übungen zur „Zeitmessung“

1. John is 315 days older than Alice. How many weeks older is John?
2. The bus arrives at 3:20 pm. It is now 2:56 pm. In how many minutes will the bus arrive?
3. Sara talked on the phone for 73 minutes per week on average for 1 whole year. About how many minutes did Sara spend on the phone in 1 year?

Vocabulary

Englisch	Deutsch
am, a.m.	Abk. für ante meridiem, vormittags
pm, p.m.	Abk. für post meridiem, nachmittags
on average	im Durchschnitt
second	Sekunde
minute	Minute
hour	Stunde
day	Tag
week	Woche
month	Monat
year	Jahr





Solutions

1. John is 315 days older than Alice. How many weeks older is John?

John is 45 weeks older than Alice.

2. The bus arrives at 3:20 pm. It is now 2:56 pm. In how many minutes will the bus arrive?

The bus will arrive in 24 minutes.

3. Sara talked on the phone for 73 minutes per week on average for 1 whole year. About how many minutes did Sara spend on the phone in 1 year?

Sara spent about 3 796 minutes on the phone.





Englische Übungen zu Gleichungen und Ungleichungen

1. Solve the equation.

a. $y + 7 = 31$

b. $12 + x = 12\frac{1}{2}$

c. $z : 3.5 = 5$

2. Solve the inequalities and answer the question.

1) $x < 15$

2) $x \geq 8$.

3) Which numbers are solutions of both inequalities?

Vocabulary

Englisch	Deutsch
equality	Gleichung
inequality	Ungleichung
solve	lösen (zB Gleichung)





Solution

1. Solve the equality.

- a. 24
- b. $\frac{1}{2}$
- c. 17.5

2.

- 1) $L = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14\}$
- 2) $L = \{8, 9, 10, \dots\}$
- 3) $L = \{8, 9, 10, 11, 12, 13, 14\}$





Englische Übungen zu Statistik

1. Bill and Alex took a 5-day bicycle tour. The timetable below shows the miles travelled.

Day 1	Day 2	Day 3	Day 4	Day 5
56.8	54.3	47.6	25.9	61.4

- 1) On which day did they travel the most miles? On which day did they travel the fewest miles?
 - 2) How many miles a day did they travel on average? Round off to whole miles.
2. How many people are in your family?
- a. Make a table of the family-size data for the class.
 - b. What is the maximum (largest) number of people in a family?
What is the minimum (smallest) number of people in a family?
 - c. What is the mean family size for the class?
 - d. Make a straight line graph of the family-size data for the class.

Vocabulary

Englisch	Deutsch
average	Durchschnitt
mean	Mittelwert
straight line graph	Streckendiagramm





Solutions

1. Bill and Alex took a 5-day bicycle tour. The timetable below shows the miles travelled.

Day 1	Day 2	Day 3	Day 4	Day 5
56.8	54.3	47.6	25.9	61.4

- 1) On which day did they travel the most miles? On which day did they travel the fewest miles?

On day 5 they travelled the most miles.

- 2) How many miles a day did they travel on average? Round off to whole miles.

They travelled 49 miles (49.2) a day on average.

2. individual solution





Englische Übungen zu „Einführung in die Geometrie“

1. A cuboid has a length of 7 cm, a width of 4 cm, and a height of 6 cm. Calculate the sum of the lengths of all the edges
 - a. in the face ABCD,
 - b. in the face ABFE,
 - c. in the face ADHE,
 - d. of the complete cuboid.
2. A cuboid has a length of 15 cm and a width of 10 cm. The sum of the lengths of all its edges is 138 cm. Calculate the height of the cuboid.
3. A cube has edges with a length of 15 cm. Calculate the sum of the lengths of all the edges
 - a. in the face ADHE,
 - b. of the complete cube.
4.
 - a. Which edges of the cuboid are parallel to the edge BF?
 - b. Which edges are perpendicular to the edge GH?
 - c. Which faces are intersecting in the edge GH?

Vocabulary

Englisch	Deutsch
cuboid	Quader
length	Länge
width	Breite
height	Höhe
to calculate	berechnen
edge	Kante
face	Begrenzungsfläche
cube	Würfel
parallel to	parallel zu
perpendicular to	normal zu (auf)
to intersect	einander schneiden





Solutions

1. A cuboid has a length of 7 cm, a width of 4 cm, and a height of 6 cm. Calculate the sum of the lengths of all the edges
 - a. in the face ABCD,
22 cm
 - b. in the face ABFE,
26 cm
 - c. in the face ADHE,
20 cm
 - d. of the complete cuboid.
68 cm
2. A cuboid has a length of 15 cm and a width of 10 cm. The sum of the lengths of all its edges is 138 cm. Calculate the height of the cuboid.
9,5 cm
3. A cube has edges with a length of 15 cm. Calculate the sum of the lengths of all the edges
 - a. in the face ADHE,
60 cm
 - b. of the complete cube.
1 m 80 cm
4.
 - a. Which edges of the cuboid are parallel to the edge BF?
AE, CG, DH
 - b. Which edges are perpendicular to the edge GH?
FG, EH, CG, DH
 - c. Which faces are intersecting in the edge GH?
EFGH, CGHD





Englische Übungen zu Geometrische Grundbegriffe

1. Construct the angles.

- a. $\alpha = 47^\circ$
- b. $\beta = 118^\circ$
- c. $\gamma = 171^\circ$
- d. $\delta = 244^\circ$
- e. $\varepsilon = 294^\circ$.

2. Sketch a figure

- a. with one axis of symmetry,
- b. with two axes of symmetry,
- c. with more than two axes of symmetry!

Vocabulary

Englisch	Deutsch
to construct	konstruieren
angle	Winkel
to sketch	skizzieren
a figure	geometrische Figur
axis of symmetry (plural: axes)	Symmetrieachse (plural: achsen)
degree	Grad

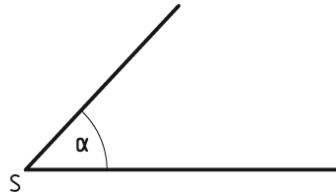




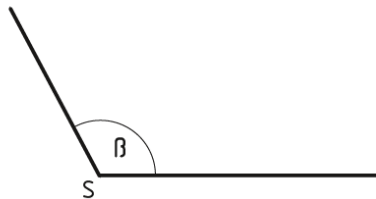
Solutions

1. Construct the angles.

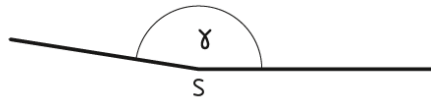
a) $\alpha = 47^\circ$



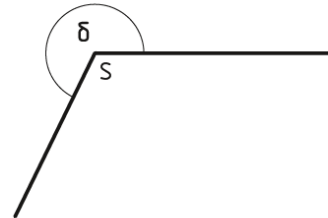
b) $\beta = 118^\circ$



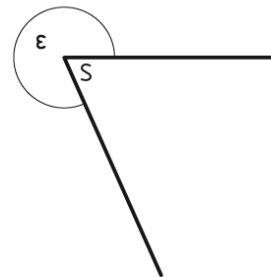
c) $\gamma = 171^\circ$



d) $\delta = 244^\circ$

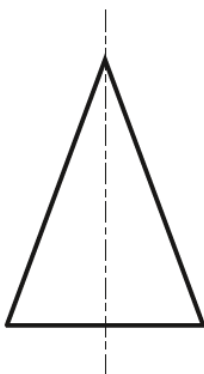


e) $\epsilon = 294^\circ$

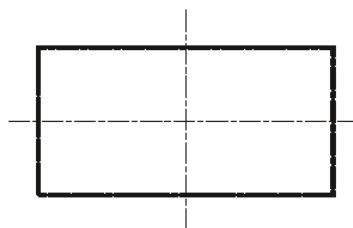


2. Sketch a figure: **for example**

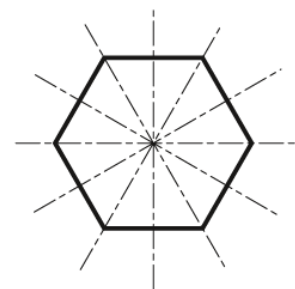
a) isosceles triangle



b) rectangle



c) regular hexagon





Englische Übungen zum Kreis

1. Draw three concentric circles. Use your compasses.
2. Draw a circle with radius $r = 57 \text{ mm}$ and a line g which intersects this circle. Then draw two parallel lines to this intersecting line g : one line should be a tangent, the other should be a non-intersecting line of the circle.
3. Draw a circle with radius $r = 49 \text{ mm}$ and one diameter of this circle. Then draw the two parallel and the two perpendicular tangent lines to this diameter.

Vocabulary

Englisch	Deutsch
midpoint	Mittelpunkt
radius	Radius
diameter	Durchmesser
circle	Kreis
area of a circle	Kreisfläche
compasses	Zirkel
to draw	zeichnen
concentric circles	konzentrische Kreise
tangent	Tangente
to intersect	einander schneiden
parallel line	Parallele
intersecting line	schneidende Gerade
non-intersecting line	nicht schneidende Gerade
perpendicular line	Normale



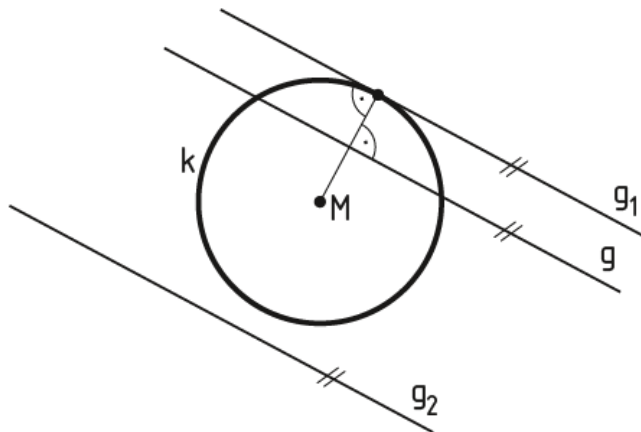


Solutions

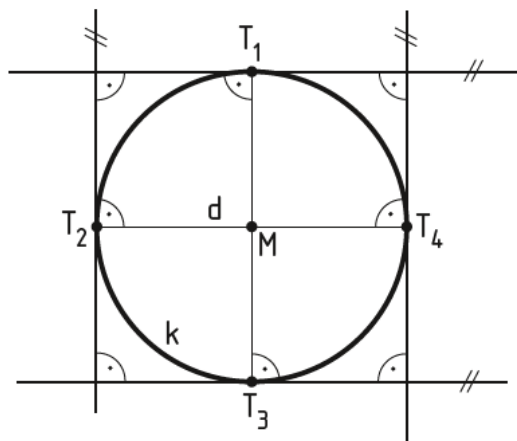
1. for example



2. Draw a circle with radius $r = 57$ mm and a line g which intersects this circle. Then draw two parallel lines to this intersecting line g : one line should be a tangent, the other should be a non-intersecting line of the circle.



3. Draw a circle with radius $r = 49$ mm and one diameter of this circle. Then draw the two parallel and the two perpendicular tangent lines to this diameter.





Englische Übungen zu „Rechteck und Quadrat“

1.

- a. Construct a rectangle ABCD with $a = 65 \text{ mm}$ and $b = 48 \text{ mm}$.
- b. Draw the diagonals and measure the angles between the diagonals.
- c. Construct the circumcircle of the rectangle.

2.

- a. Construct a square with $a = 54 \text{ mm}$.
- b. Draw the diagonals and the circumcircle of the square.





3.

- a. A square has a perimeter of 164 cm. Calculate its area.
- b. A rectangle has a perimeter of 456 mm. One side of the rectangle has a length of 104 mm. Calculate the area of the rectangle.
- c. A rectangle has an area of 320 cm². One side of the rectangle has a length of 16 cm. Calculate the perimeter of the rectangle.

4. A rectangular piece of land has a length of 48.2 m and a width of 32.5 m. On this piece of land there is a square house with 14 m length and a rectangular hut with a length of 4.5 m and a width of 2.8 m.
How many squaremeters do remain for the garden?

Vocabulary

Englisch	Deutsch
to construct	konstruieren
rectangle	Rechteck
to draw	zeichnen
diagonals	Diagonalen
to measure	messen
angle	Winkel
circumcircle	Umkreis
square	Quadrat
perimeter	Umfang
to calculate	berechnen
area	Flächeninhalt
rectangle	Rechteck
length	Länge
rectangular piece of land	rechteckiges Grundstück
width	Breite
square house	quadratisches Haus
to remain	übrig bleiben
squaremeter	Quadratmeter
hut	Hütte

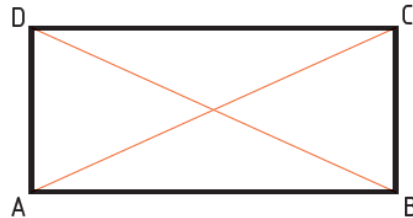




Solutions

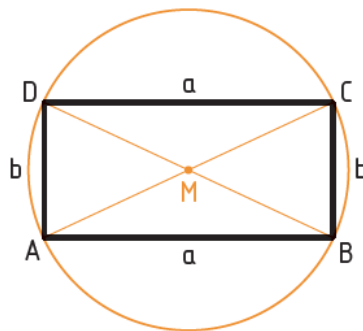
1.

- a. Construct a rectangle ABCD with $a = 65 \text{ mm}$ and $b = 48 \text{ mm}$.



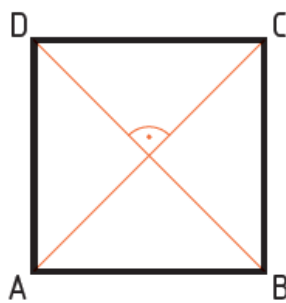
- b. $d = 81 \text{ mm}$, $\alpha = 73^\circ$, $\beta = 107^\circ$

- c. Construct the circumcircle of the rectangle.



2.

- a. Construct a square with $a = 54 \text{ mm}$.



- b. $d = 76 \text{ mm}$

3.

- a. $A = 1\,681 \text{ cm}^2$
b. $A = 12\,896 \text{ mm}^2$
c. $u = 72 \text{ cm}$

4. $1\,357.9 \text{ m}^2$ remain for the garden.





Englische Übungen zu Maßstäbliches Zeichnen

1. Model airplanes are built in a scale of 1 : 400.
 - a. A model has a length of 45 cm. What is the length of the real airplane?
 - b. An airplane has a length of 85 m. What is the length of its model?

2. Draw the square in a scale of 1 : 2000. $a = 0.05$ km

3. Draw the rectangle in a scale of 1 : 150. $a = 12$ m, $b = 7.5$ m

Vocabulary

Englisch	Deutsch
model airplane	Modellflugzeug
in a scale of	im Maßstab von
rectangle	Rechteck
square	Quadrat





Solutions

1. Model airplanes are built in a scale of 1 : 400.
 - a. A model has a length of 45 cm. What is the length of the real airplane?
The length of the real plane is 180 m.
 - b. An airplane has a length of 85 m. What is the length of its model?
The length of the model is 21.25 cm.
2. **a = 2.5 cm**
3. **a = 8 cm, b = 5 cm**





Englische Übungen zu Quader und Würfel

1. Draw the net and calculate the surface area.

- a. Cube: $a = 4.2 \text{ cm}$
- b. Cuboid: $a = 3.7 \text{ cm}$, $b = 2.9 \text{ cm}$, $c = 4.5 \text{ cm}$

2. Calculate

- a. the volume and
- b. the surface area.
 - 1) Cuboid: $a = 2.5 \text{ m}$, $b = 1.3 \text{ m}$, $c = 3.5 \text{ m}$
 - 2) Cuboid with a square base: $a = b = 76 \text{ cm}$, $c = 1.35 \text{ m}$
 - 3) Cube with a length of 66 cm





3. An aquarium has a length of 1.2 m, a width of 60 cm, and a height of 40 cm.
- How many litres of water are inside this aquarium if it is filled with water?
 - What is the height of the water if there are 180 litres of water in this aquarium?
4. A rectangular swimming pool has a length of 10 m, a width of 4 m, and a depth of 2.5 m.
- How many hectolitres of water are necessary to fill the swimming pool?
 - How many tons of water are in the pool if 1 m³ water has a mass of 1 ton?

Vocabulary

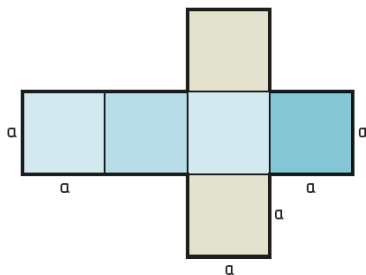
Englisch	Deutsch
net	Netz
to calculate	berechnen
surface area	Oberfläche
cube	Würfel
cuboid	Quader
volume	Rauminhalt
square base	quadratische Grundfläche
length	Länge
width	Breite
height	Höhe
to be filled	gefüllt sein
rectangular	rechteckig
depth	Tiefe
necessary	notwendig
ton	Tonne
mass	Masse





Solutions

1. Draw the net and calculate the surface area.



- a. Cube: $a = 4.2 \text{ cm}$
 $O = 106 \text{ cm}^2 (105.84)$
- b. Cuboid: $a = 3.7 \text{ cm}$, $b = 2.9 \text{ cm}$, $c = 4.5 \text{ cm}$
 $O = 81 \text{ cm}^2 (80,86)$
2. a) **$V = 11.4 \text{ m}^3 (11.375)$** b) **$O = 33.1 \text{ m}^2$**
2) a) **$V = 0.78 \text{ m}^3 (0.779 \text{ 76})$** b) **$O = 5.26 \text{ m}^2 (5.259 \text{ 2})$**
3) a) **$V = 0.29 \text{ m}^3 (0.287 \text{ 496})$** b) **$O = 2.6 \text{ m}^2 (2.613 \text{ 6})$**
3. An aquarium has a length of 1.2 m, a width of 60 cm, and a height of 40 cm.
- a. **There are 288 litres of water inside this aquarium.**
- b. **The height of the water is 25 cm.**
- 4.
- a. **1 000 hl of water are necessary to fill the pool.**
- b. **There are 100 tons of water in the pool.**

