

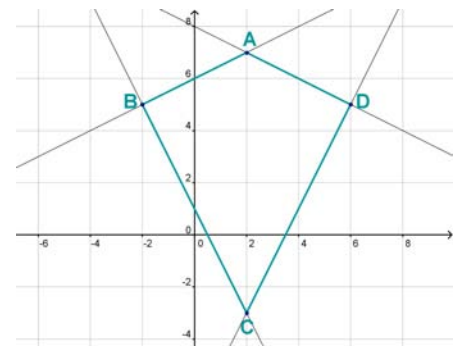
### 3 Funktionen

#### Englische Aufgaben

- 3.1** The diagram shows a kite with vertices A, B, C and D. Match a line in A with a rule in B.

A	B
line through C and D	$x \mapsto -0.5x + 8$
line through A and B	$x \mapsto -2x + 1$
line through B and C	$x \mapsto 0.5x + 6$
line through A and D	$x \mapsto 2x - 7$

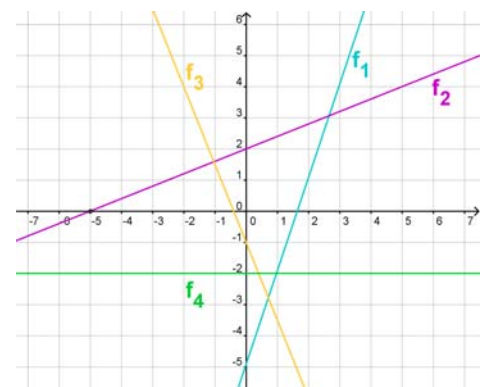
[kite ... Deltoid; vertex (plural: vertices) ... Eckpunkt; to match ... verbinden]



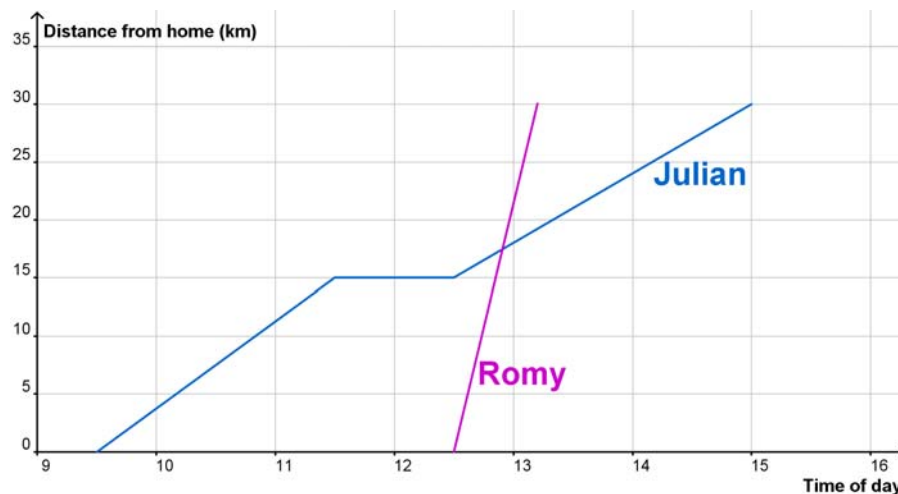
- 3.2** Are the following statements true or false? Correct the false statements.

- The graph of  $f_2$  crosses the x-axis in  $(0 \mid -5)$ .
- The graph of  $f_1$  has a steeper slope than the graph of  $f_4$ .
- The graph of  $f_3$  crosses the y-axis in  $(0 \mid -1)$ .
- The graph of  $f_4$  is a vertical line.

[steep ... steil; slope ... Steigung; vertical ... senkrecht]



- 3.3** Romy and Julian go to the zoo which is 30 kilometres from their house. Julian wants to go by bike and leaves home at 9.30 am. Romy has to finish some work and leaves later using her car.



- How long does Julian take a break and how much more kilometres does he have to cycle to get to the zoo after his break?
- After his break Julian cycles more slowly. Explain how the above graph shows this.
- When does Romy leave home?
- At what time does Romy approximately pass Julian?
- How many minutes does Romy have to wait before Julian arrives at the zoo.
- Estimate Romy's speed.

[approximately ... näherungsweise]

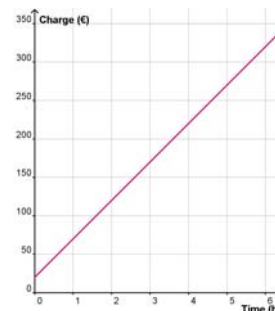
## 3 Funktionen

### Englische Aufgaben

**3.4** Mr Colour is a painter and charges a fixed call-out charge and an hourly rate. The graph shows the charges made for jobs up to 6 hours.

- What is the fixed call-out charge?
- Calculate the hourly charge.
- Think of an equation of the line.
- What does Mr Colour charge for a job which takes 8 hours?

[to charge ... berechnen; call-out charge ... Anfahrtspauschale]



**3.5** Chocolate bars can be bought from a vending machine in a school's canteen. At eight o'clock in the morning the machine is four fifth full. During the break from 9.30 am to 9.45 am, students buy bars from the machine at a steady rate. When the break is over the machine is two-fifth full. At 11.30 am Mr Dodd refills the machine. During the lunch break from 1 pm to 2 pm students continue to buy chocolate bars from the machine. At about a quarter to 2 pm someone complains that the machine is empty. Mr Dodd refills the machine again so that the students can buy some more chocolate during their afternoon break from 3.30 pm to 3.45 pm. At 4 pm the machine is three fifth full.

Sketch a graph to show the number of chocolate bars in the machine from 8 am to 4 pm.

[vending machine ... Automat; to complain ... sich beschweren]

**3.6** In Britain miles are used to measure large distances. In Austria and in the rest of Europe we use kilometres to measure distances. An easy way to change miles into kilometres is:

$$5 \text{ miles} = 8 \text{ kilometres}$$

- Draw up a table of values for 0, 5, 10, 15, 20 and 25 miles and then draw the graph for the table of values.
- Use your graph to find how many kilometres are approximately the same as 12 miles.
- How many miles are approximately the same as 24 kilometres?

[to measure ... messen; table of values ... Wertetabelle]

**3.7** Mrs Smith bought a new carpet. She placed it centrally on the floor of her living room which is 6 metres by 4 metres. The distance from the edges of the carpet to the walls is  $z$  metres. The new carpet covers half the area of the floor.

Calculate the carpet's distance from the room's walls.

[edge ... Rand]

**3.8** Brian is training for the Ironman in Hawaii. One day he cycles for  $t$  hours in the morning and rides a distance of 84 km. In the afternoon Brian has to cycle one hour more to travel the same distance and now his average speed is 2 km/h slower than in the morning. Calculate the number of hours Brian cycles in the afternoon.

[average ... Durchschnitts-]

**3.9** The following ingredients are needed to make pancakes for four people:

- 2 cups flour
- 2 1/2 teaspoons baking powder
- 3 tablespoons sugar
- 1/2 teaspoon salt
- 2 large eggs
- 1 1/2 cups milk
- 2 tablespoons melted butter

Work out the amount of each ingredient that you need to make pancakes for six people.

[ingredient ... Zutat]

**3.10** Mr Mackenzie is a greengrocer and sells organic vegetables. He fills apples into bags. If he puts 4 kg of apples in a bag, he fills 60 bags. How many bags will he fill if he puts only 3 kg in each bag?

[greengrocer ... Obst- und Gemüsehändler; organic ... biologisch]