

Fill in the blanks using the appropriate mathematical terms.

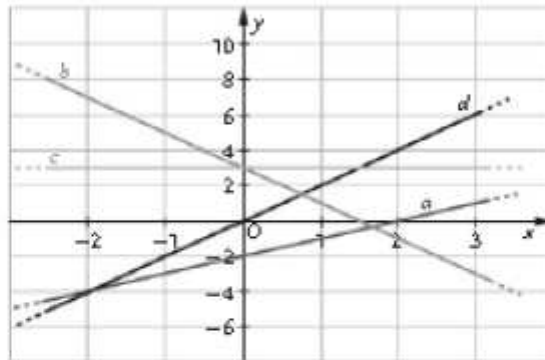
LINER FUNCTION

Its graph is a straight line. It is described by the expression $y = mx + n$. The domain of the function is .

n is the with the y -axis. If $n = 0$ then the graph passes through the (d).

m is called the of the function.

- If $m > 0$ then the function is (a, d).
- If $m < 0$ then the function is (b).
- If $m = 0$ then the function is (c) and the graph is parallel to the x -axis.

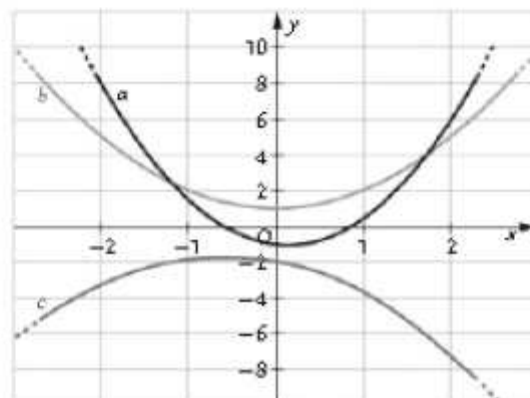


PARABOLA

It is described by the expression $y = ax^2 + bx + c$, where $a \neq 0$. The of the function is \mathbb{R} .

Therefore there must be an with the y -axis.

- If $a > 0$ then the graph looks like a U (a, b) and the function has a .
- If $a < 0$ then the graph looks like a bow (c) and the function has a .
- If either the minimum is the x -axis (a) or the maximum is the x -axis, then the function has two : this occurs when $b^2 - 4ac$ 0. If $b^2 - 4ac$ 0 there are no intercepts with the x -axis (b, c).

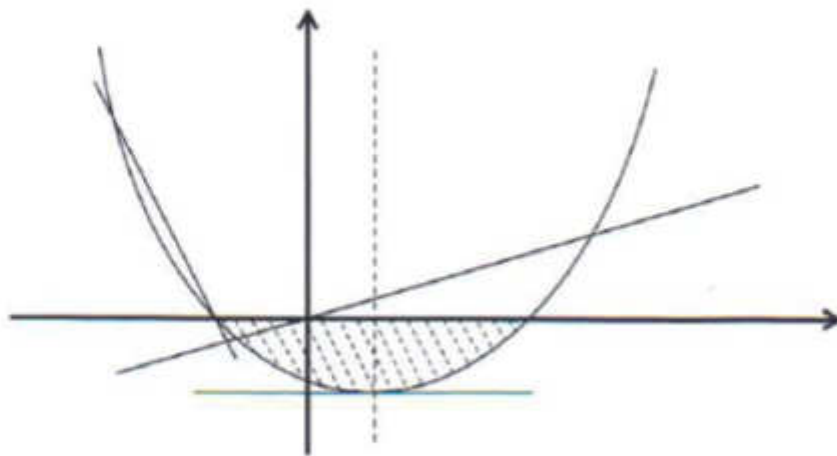


Talking about graphs

Exercise 1

Look at the words below. Listen to your teacher pronounce them and mark the stress and sounds of the words. Then **label** the diagram and describe it to your partner.

x-axis	horizontal	vertical	linear graph	above the x-axis
y-axis	parabola	to cross	quadratic graph	below the x-axis
axes	secant	tangent	point of intersection	shaded area
vertex	linear equation	x-intercept	point of inflection	origin
point	straight line	y-intercept	is perpendicular to	turning point
curve	axis of symmetry	curved line	inverted parabola	to intersect
Cartesian coordinates (x,y)	the parabola opens upwards/downwards/sideways			
positive/negative gradient (slope)	the steepness of the slope		1st, 2nd, 3rd, 4th quadrant	



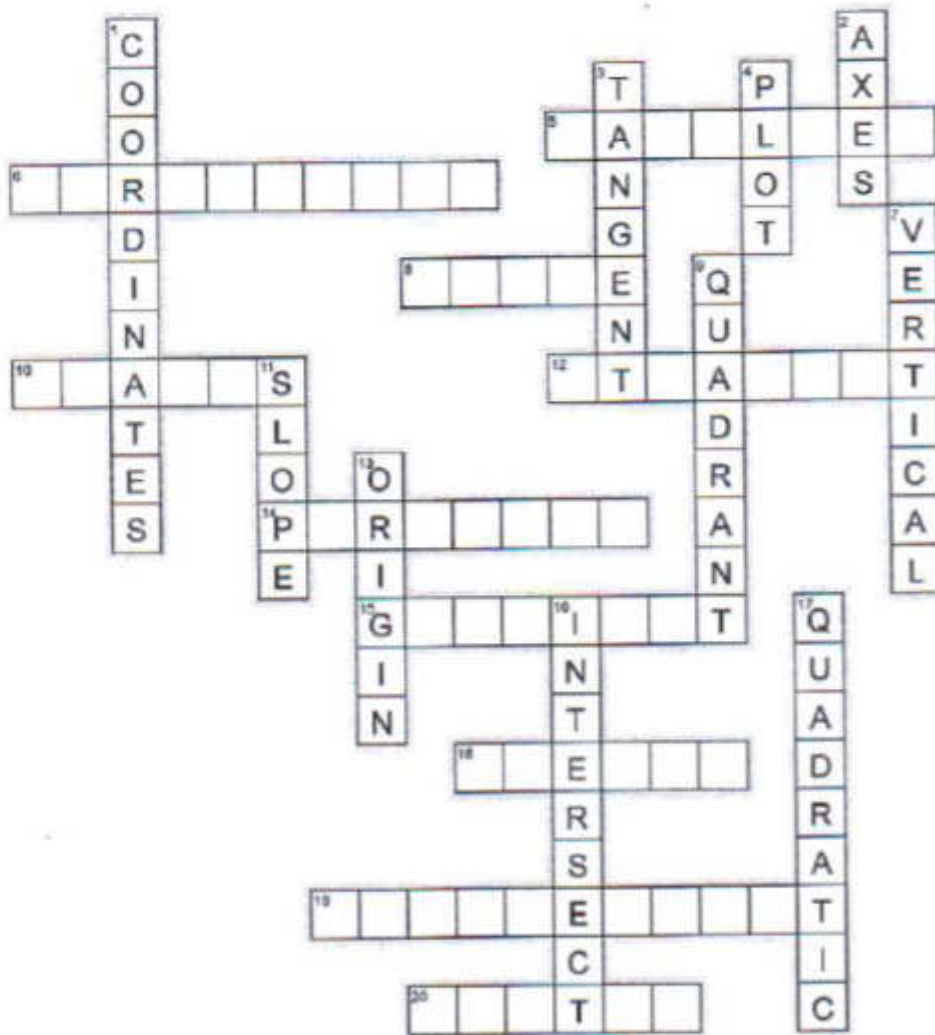
Exercise 2 What is the difference between *to plot a graph* and *to sketch a graph*?

Exercise 3 What are the missing words?

- 1 Look at this point _____ the line.
- 2 The lines intersect _____ this point.
- 3 By looking at the graph we can see that the speed increases _____ time.
- 4 This line passes _____ the origin.
- 5 Plot the graph of voltage (y-axis) _____ current (x-axis).
- 6 The y-intercept can be read _____ the graph.

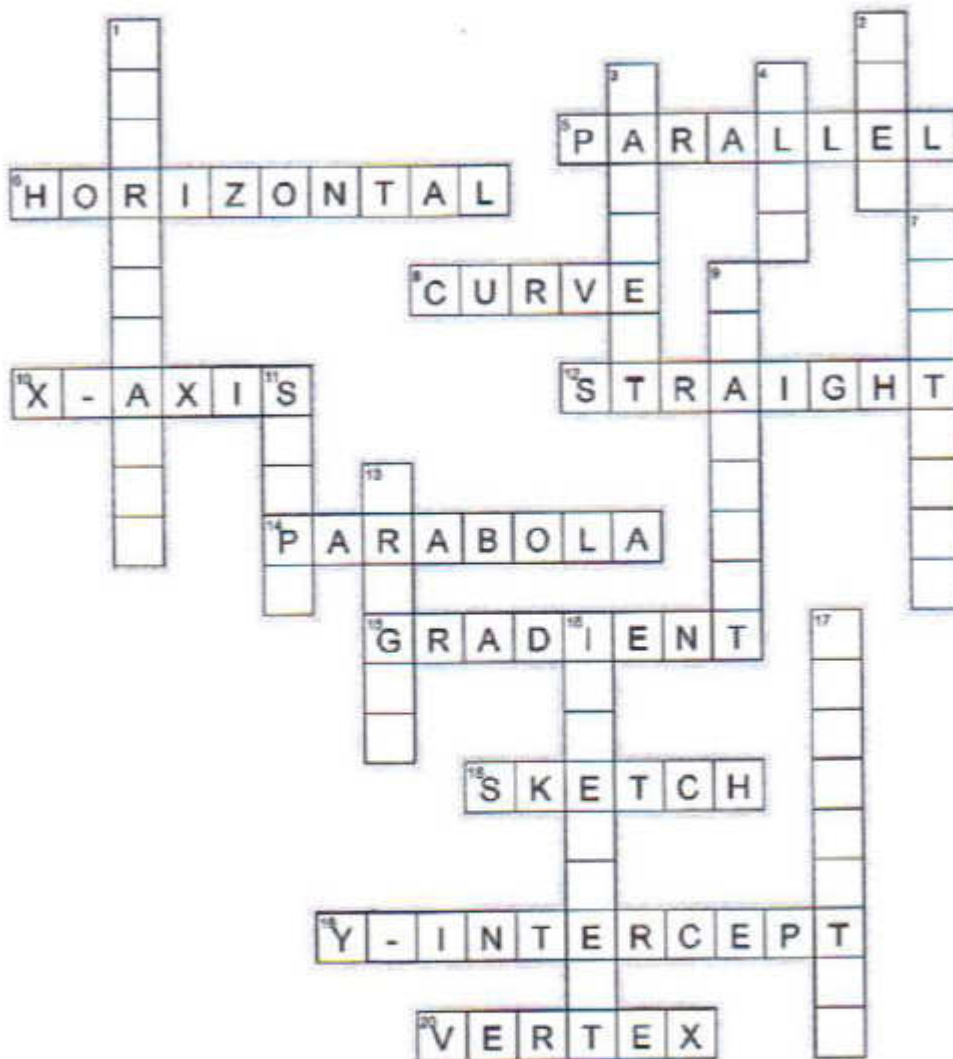
Graphs communicative crossword

Student A



Graphs communicative crossword

Student B



Instructions

You have half of a crossword. Find out the missing words, e.g. ask your partner:

"What's 1 down?"

Your partner will explain the word. When you know the word, you must say:

"Oh, I see!"

Do not say the word out loud. If you cannot understand what the word is, say to your partner:

"How do you spell it?"