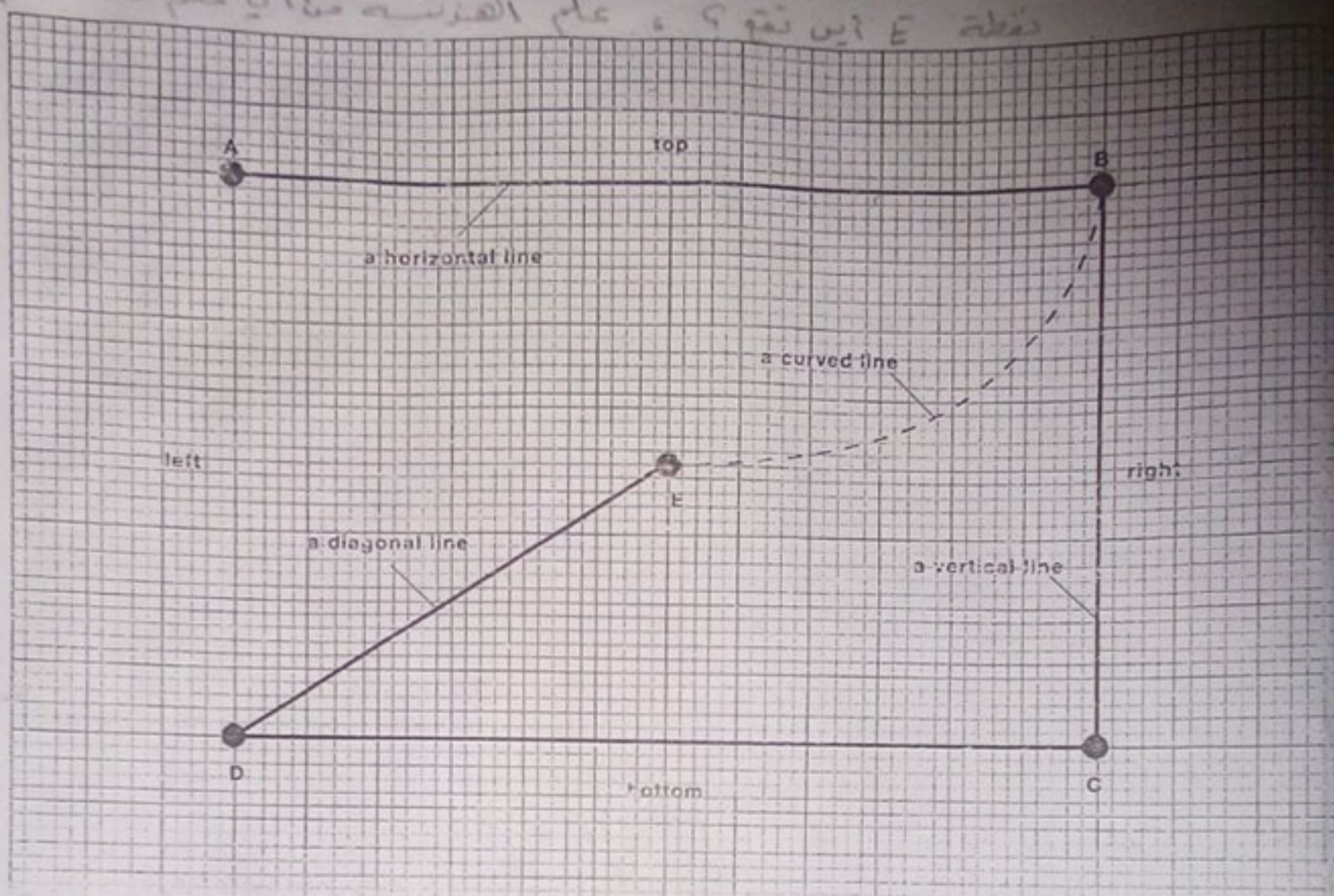


Section 1: Vocabulary

الهندسة / الهندسة من أي علم الهندسة؟
 هنا يمكن دكتور طب رسة
 وتساكن الخط AB ماهد
 نقطة E أين تقوى؟ علم الهندسة من أي علم الهندسة؟



A Read the text and look at the diagram.

Geometry is a part of mathematics. It is the study of points and lines, surfaces and angles, and solid shapes. We look at points and lines in this unit, surfaces and angles in Unit 4 and solid shapes in Unit 5.

A point has position. For example, point A is top left of the diagram, and point C is bottom right. Point E is in the centre. We can also say that point A is above point D and point C is below point B.

A line has direction. For example, line AB goes left to right. We call a line like this horizontal.

Line BC goes top to bottom. We call a line like this vertical. Line DE goes bottom left to centre. We call a line like this diagonal.

The shortest line between two points is straight. All the solid lines in the diagram are straight lines. However, we can also join two points with a curved line. The dotted line EB is curved.

When two straight lines have the same direction, but do not meet, we call them parallel. DC is parallel to AB.

A line also has length. It can be long, or short, or medium length.

B Look at the signs on the right. Complete the description. Use the words in the box.

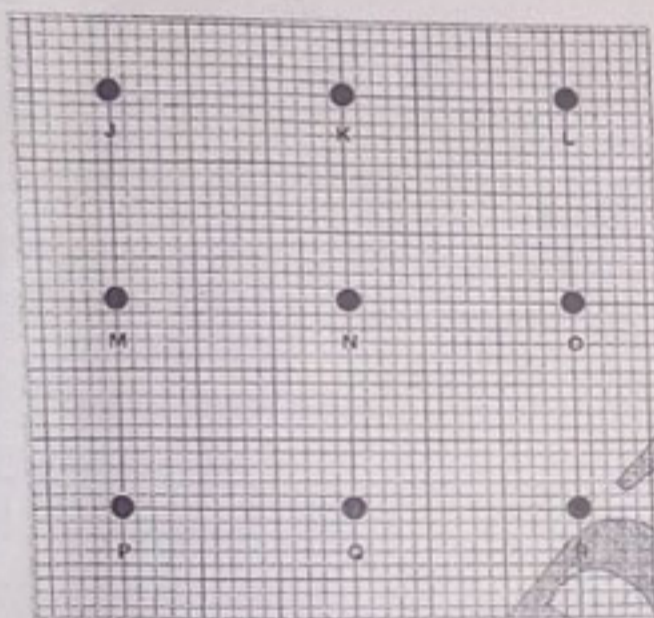
عامودي أعلى متوازي يمين أفق مائل منحني تحت فوق
 above below curved diagonal horizontal left parallel top vertical

في هذا سؤال لدينا اشارات مرسومة بالخطوط علينا الفراغات

- There is a short horizontal line.
- There is a short horizontal line crossed by a short vertical line.
- There is a short horizontal line and one point above the centre and one point below the centre.
- There is a diagonal line from top left to bottom right crossed by another diagonal line from top right to bottom left.
- There is a vertical curved line.
- There is a short horizontal line. There is another short horizontal line above and parallel to it.

-
+
÷
×
(or)
=

C Where is each point in the panel? Write the letter next to the correct word or phrase.



| | | |
|---|---------------|---|
| 1 | top centre | K |
| 2 | centre left | J |
| 3 | centre right | L |
| 4 | bottom centre | Q |
| 5 | centre | N |
| 6 | above O | L |
| 7 | below M | P |
| 8 | top left | J |
| 9 | bottom right | R |

في هذا سؤال لدينا مخطط بياني فيونا نقاط الدكتور يمكن جيلنا الجدول هذا 1-9 بنسج افتر اجلة صحبة ايه حاهي نقطة التي موقعها اسفل يمين؟ او نقطة 0 اين تقع 9 وهكذا

Section 2: Reading

A Read the text opposite. Choose the best answer in each case.

- In Figure 1, number 7 has a short horizontal line and:
 - a long horizontal line.
 - b** a long diagonal line.
 - a short vertical line.
 - a long curved line.
- In Figure 1, how many numbers have a curved line?
 - six
 - b** seven
 - eight
 - nine
- The numbers in Figure 2:
 - have no straight lines.
 - b** have no curved lines.
 - have no thick and thin lines.
 - have no black and white lines.
- How can you make the number 7 on the screen of a calculator?
 - BD + DF
 - AB + BD + CD + CE
 - c** AB + BD + DF
 - AB + BD

هذا سؤال تابع لبعض Displaying numbers بسيط

Displaying Numbers

number
هو رقم كمي
بيننا
numerals
هو شكل رقم
بسيط
Simple ≠
مُعقّد
Complicated

WHEN SCIENTISTS DESIGNED THE first pocket calculator, they needed a simple way to show the Arabic numerals 0 to 9 on the screen. They wanted to use straight horizontal and vertical lines of the same length. Is there a way? Handwrite the numbers (Figure 1) and the answer seems to be No. There are straight vertical lines in number 1 and number 4, and straight horizontal lines in numbers 2, 4, 5 and 7. But there are other lines too. There are diagonal lines in number 4 and number 7, and curved lines in all the other numbers except number 1. In addition, the lines are different lengths.

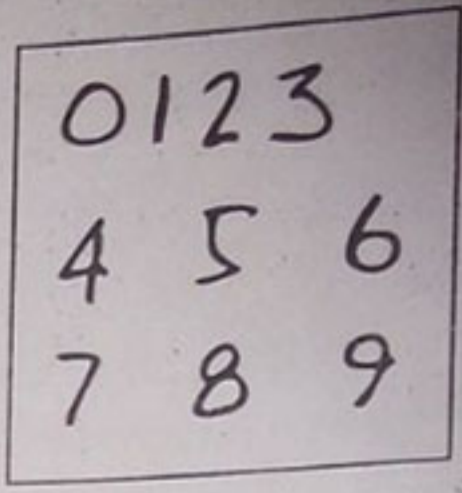


Figure 1 (handwrite)

However, we can write the numbers in a simpler way. For example, there is a set of numbers used by computer systems in some banks. It is called 'computer readable' (Figure 2). In this system, the computer actually reads the numbers, on cheques for example, so the number must be exactly the same each time. But, look closely at this set of numbers and you will see that the system is still quite complicated. Some of the lines are thick and some are thin. There are two positions for the short horizontal line in the centre (in 3 and 4) and the horizontal line in the centre of 2 is shorter than the centre line in 6.

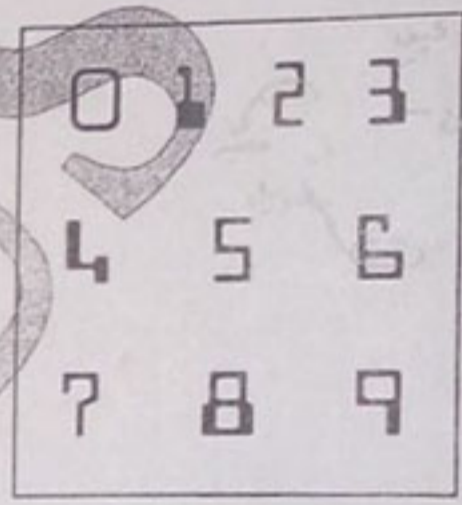


Figure 2 (computer readable)

Then scientists found the answer. Turn on your calculator. Look closely at the screen. There are only seven lines. They are arranged like the number 8 (Figure 3). They are all the same length. However, with these seven lines, we can make all the numbers from 0 to 9. The computer program in the calculator tells the screen which lines to light up to make each number. So the computer instruction for number 1 is $\underline{BD} + \underline{DF}$, and for number 5, it is $\underline{AB} + \underline{AC} + \underline{CD} + \underline{DF} + \underline{EF}$.

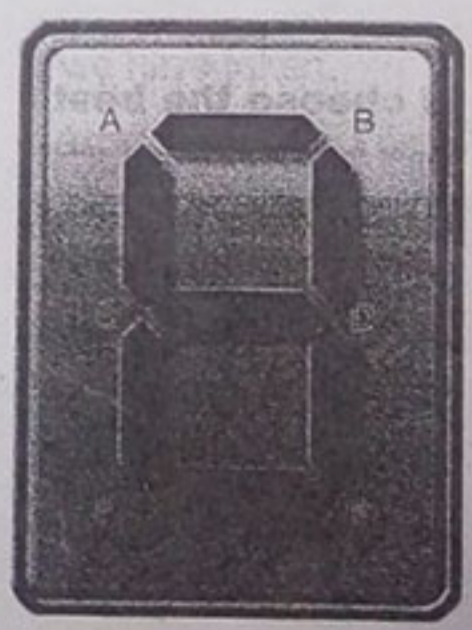
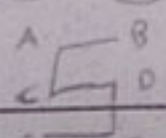


Figure 3 (screen calculator)



Talking about new topics

We use There is and There are to introduce a new topic.

We use It is and They are to give more information about an 'old' topic.

Examples:

There is a set of numbers. It is called 'computer readable'.

There are seven straight lines. They are arranged like the number 8.

the bottom at the top

left مع on تقدم
right مع

C Look at the numbers. Complete each sentence with a suitable word.

There is a diagonal line in the number 7. It is from

the top right to the bottom left. there is also a horizontal line.

it is at the top. There aren't any curved lines.

There are three straight lines in the number 4. there is a

vertical line. it meets a diagonal line at the top.

There is a horizontal line. It meets the diagonal line

on the left and crosses the vertical line.

هذا السؤال

