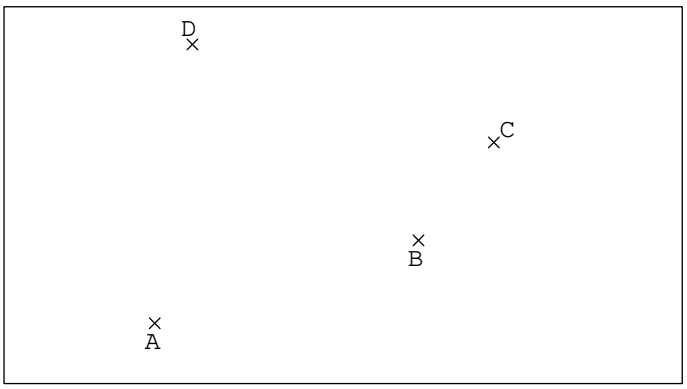
ChingQuizz : 6 exercises available for Quizz assessment :

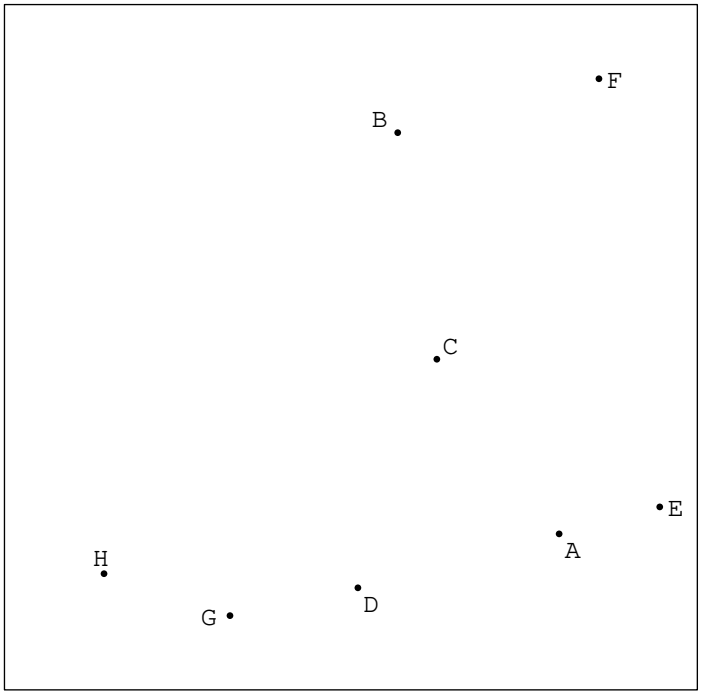
1. *Use of lines, half-lines and segments*

E.2191 Consider the four points A, B, C, D of the plane shown below :



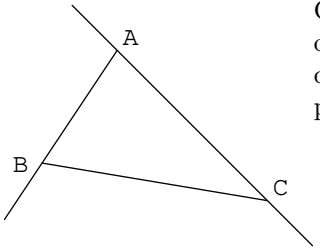
1. Draw the straight line passing through the points A and B.
2. Draw the half-line with origin D and passing through A.
3. Tracer le segment d'extrémités les points B et C
4. Place the point E intersection of the line passing through the points A and B and the line passing through the points D and C

E.6478 In the plane, consider the 8 points below :



1. a. Draw the segment $[BE]$ and the half-line $[AF)$.
   b. Name P the point of intersection of segment $[BE]$ and half-line $[AF)$.
   c. Draw the half-lines $[AC)$ and $[BD)$.
   d. Name M the point of intersection of the half-lines $[AC)$ and $[BD)$.
   e. Draw the quadrangle $APBM$.
   f. What is the nature of the quadrilateral $APBM$?
2. a. Draw the straight lines (GM) and (AH).
   b. Name N the point of intersection of the straight lines (AH) and (GM).
   c. Draw the triangle AMN.
   d. What is the nature of the triangle AMN?

E.1515



Consider the configuration shown opposite. Copy and complete the dotted lines with the names of the points and the following words :
- "*passant*"
- "*d'extrémités*"
- "*d'origine*".

A, B and C being three non-aligned points.

1. Draw the straight line ..... through the points ..... and ..... .
2. Trace the segment ..... the points ..... and ..... .
3. Draw half-line ..... point ..... and ..... through point ..... .

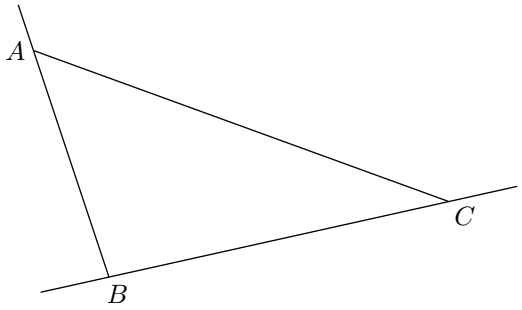
2. *Notations of lines, half-lines and segments*

E.10006

Notation:

(AB)	the line passing through points A and B.
$[AB)$	the half-line with origin A and passing through point B
$[AB]$	the segment with endpoints A and B

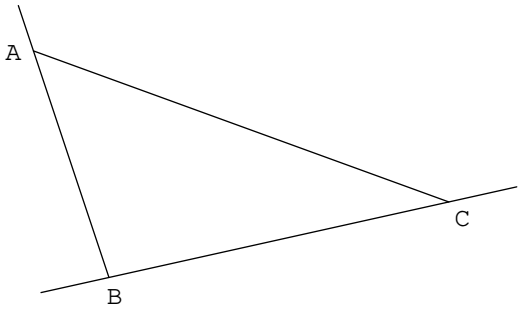
Consider the figure below:



For each question, circle the geometric object present in the above configuration:

1. $[AB]$; (AB) ; $[AB)$; $[BA)$
2. $[AC]$; (AC) ; $[AC)$; $[CA)$
3. $[BC]$; (BC) ; $[BC)$; $[CB)$

E.10760 Consider the figure below:



For each question, circle the geometric object present in the above configuration:

1. $[AB]$; (AB) ; $[AB)$; $[BA)$
2. $[AC]$; (AC) ; $[AC)$; $[CA)$
3. $[BC]$; (BC) ; $[BC)$; $[CB)$

E.3481 Link each sentence with the appropriate notation:

The segment having as endpoints the points A and B	(AB)
The half-line with origin A and passing through the point B	AB
The distance separating the points A and B	$[AB]$
The straight line passing through the points A and B	$[AB)$

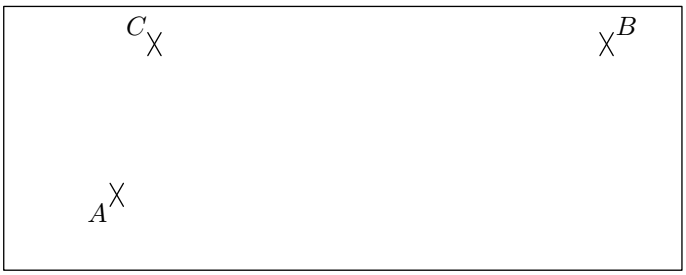
E.1518 Copy and simplify each of the sentences below using mathematical notation:

1. Draw the segment with extremities U and V, and lengths $2\,cm$
2. Draw the half-line with origin Z and passing through W.

E.10008 Retell the following sentence using the proper mathematical notations as much as possible:

Draw the half line with origin O passing through the point A. Place the point B belonging to this half line such that the distance between the points A and B vale 5 centimeters.

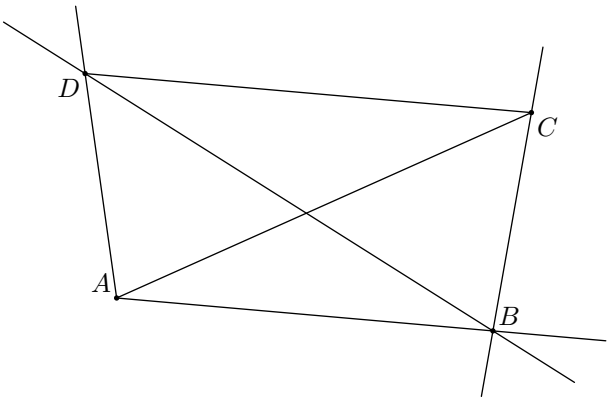
E.10781 Consider the three points below:



Perform the following plotting program:

"*Trace* (AB). *Trace* $[CA)$. *Trace* $[BC]$"

E.10820 Consider the figure below:



For each question, circle the geometric object present in the configuration above:

1. $[AB]$; (AB) ; $[AB)$; $[BA)$
2. $[AC]$; (AC) ; $[AC)$; $[CA)$
3. $[BC]$; (BC) ; $[BC)$; $[CB)$

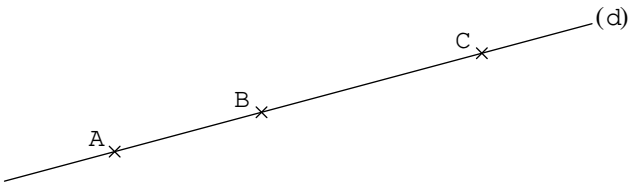
E.1516

1. Add, in the right places and if necessary, parentheses ( ) and brackets [ ] in the right places in the text below:

   Draw a segment AB such that $AB=5$cm. Draw a line CD that intersects the line AB at O. Place a point K belonging to neither of these two straight lines. Then draw the half-line KO with origin K and passing through the point O.

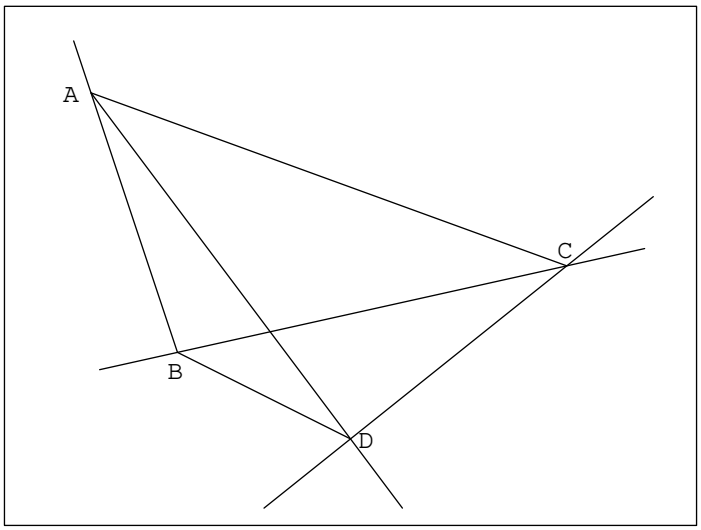
2. Perform the plot program from question 1.

E.2193 Consider the line (d) of the plane shown below and A, B, C three points of this line:



Using the three points A, B and C, name the line (d) in several ways.

E.3482 In the plane, consider the four points A, B, C, D represented below:



Lines, half-lines and segments have been drawn using these four points.

1. Using the four points A, B, C, D, name:
   - a. all the lines present on this figure.
   - b. all the half-lines present on this figure.
   - c. all the segments drawn on this figure.
2. a. Place the point M the point of intersection of the lines (BC) and (AD).
   b. Name all the half-lines having the point M as their origin.
   c. Name three semilines which pass through the point M.

E.3480 In the plane, consider the three points A, B, C represented below:

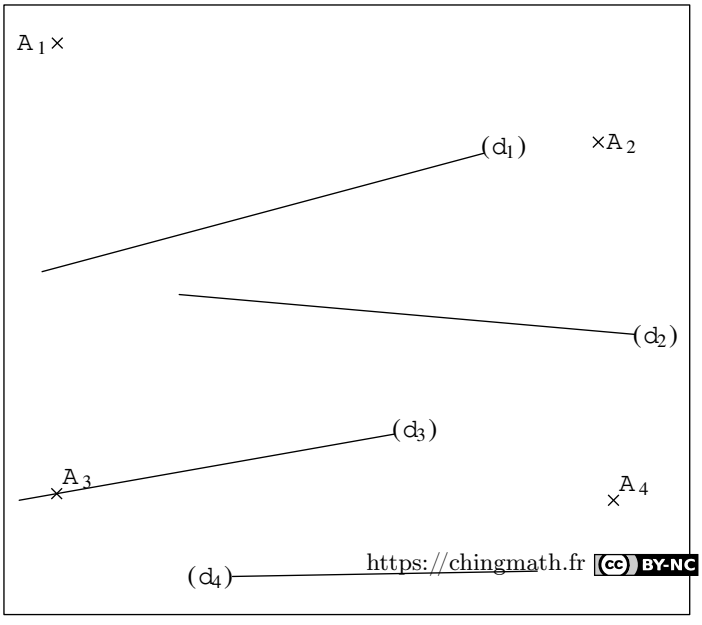
1. Perform the following plot program on the figure above:
   - Draw the line passing through the points B and C.
   - Draw the half-line with origin at point B and passing through point A.
   - Draw the segment with end points A and C.
   - Place the point M belonging to the segment of extremities the points A and B and such that the distance separating the points A and M is $3\,cm$.
2. The plotting program has been reproduced below, omitting the mathematical notations; complete this plotting program appropriately:
   - Trace BC.
   - Plot BA
   - Trace AC
   - Place the point M verifying the following two properties:
     $M \in AB$; $AM = 3\,cm$

E.1502 Place four points A, B, M and N such that:

- (AB) and (MN) are secants
- $[AB]$ and $[MN]$ are not secant

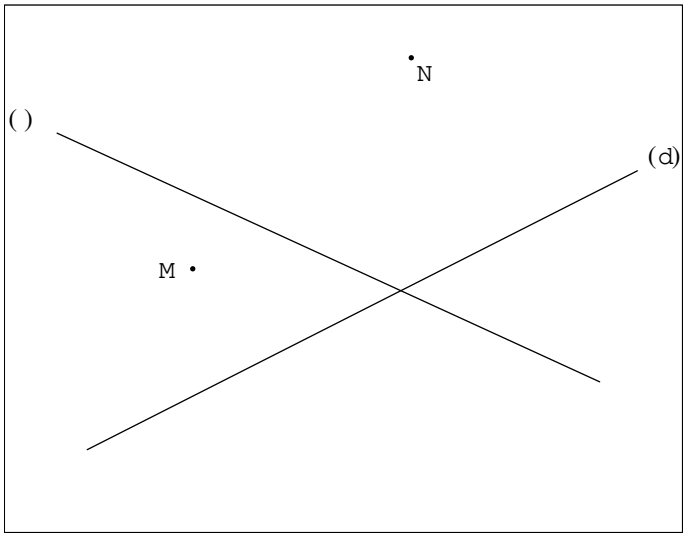
3. *Drawing perpendiculars*

E.2207 The configuration below shows four questions. Each question is given a point and a line.



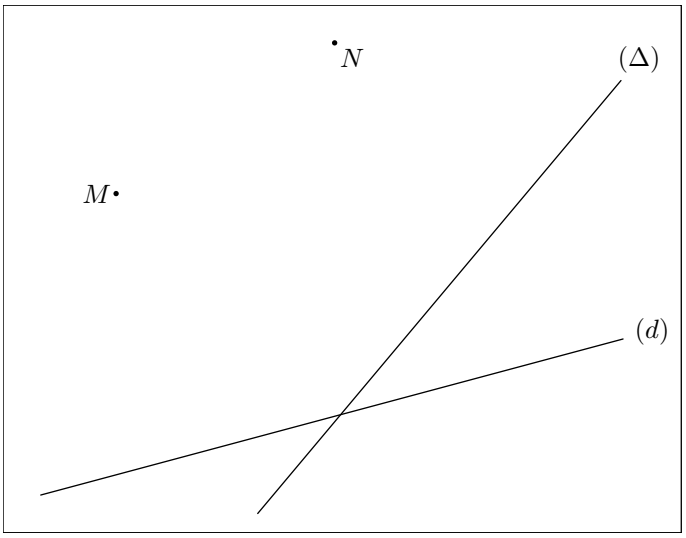
For each of the lines shown, draw the perpendicular to the given line passing through the associated point.

E.3495 In the plane, consider the two straight lines (d) and (Δ) and the two points M and N shown below:



1. Draw the line perpendicular to the line (d) passing through the point M.
2. Draw the line perpendicular to the line (Δ) passing through the point N.
3. a. Name P the point of intersection of the straight lines (d) and (Δ).
   b. Draw the straight line (MN).
   c. Draw the line perpendicular to the line (MN) passing through the point P.

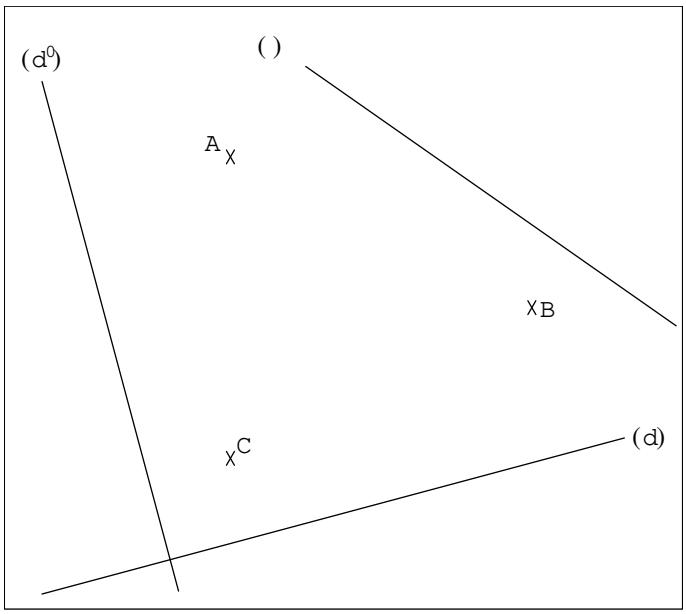
E.10761 In the plane, consider the two straight lines (d) and (Δ) and the two points M and N shown below:



1. Draw the line perpendicular to the line (d) passing through the point M.
2. Draw the line perpendicular to the line (Δ) passing through the point N.

4. *Drawing parallels*

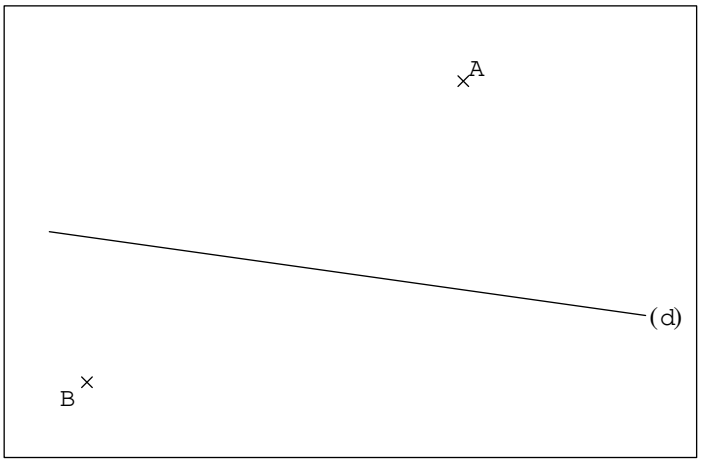
E.2712 Consider, in the plane, the three straight lines below and the following three points:



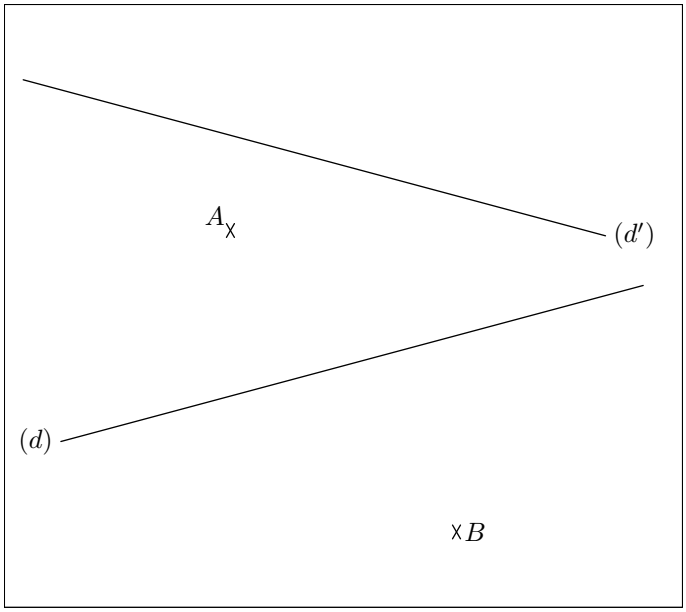
1. Draw the line parallel to the line (d) and passing through the point A.
2. Draw the line parallel to the line (d') and passing through the point B.
3. Draw the line parallel to the line (Δ) and passing through the point C.

E.2208 In the figure below, use your ruler and square to draw:

1. the parallel to the line (d) passing through A.
2. the parallel to the line (d) passing through B.



E.10762 Consider the three lines below and the following three points in the plane:

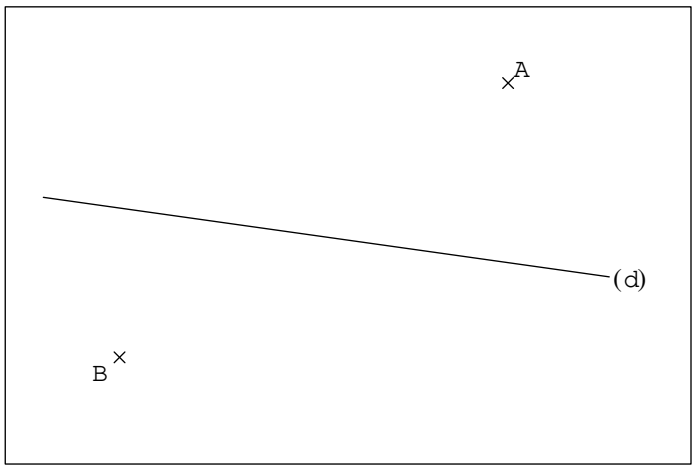


1. Draw the line parallel to line (d) and passing through point A.
2. Draw the line parallel to line (d') and passing through point B.

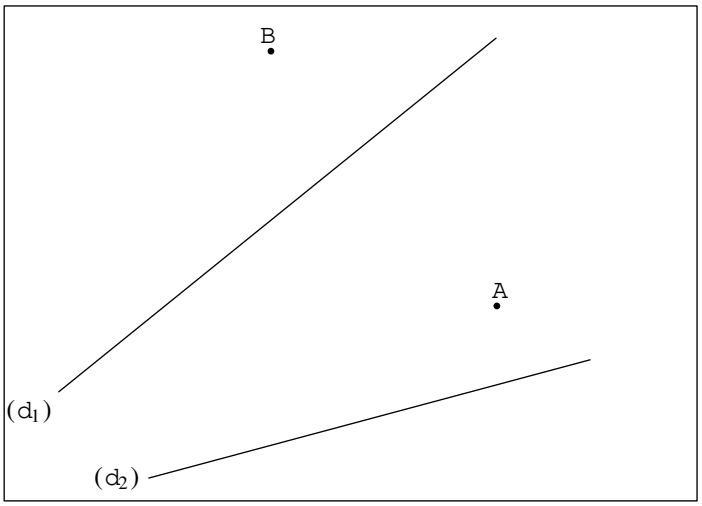
5. *Drawing perpendiculars and parallels*

E.2210

1. Freehand drawing:
   a. the perpendicular to the line (d) passing through A.
   b. the parallel to the line (d) passing through B.
2. Check the accuracy of your plots with your drawing instruments.

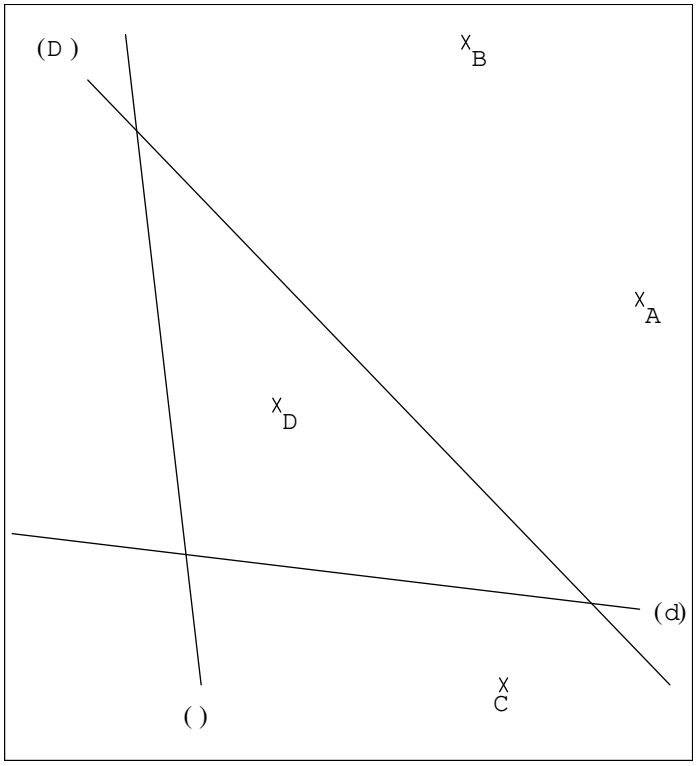


E.1510 In the figure below, draw:



1. The line perpendicular to (d_1) passing through the point A
2. The parallel to (d_2) passing through A.
3. The parallel to (d_2) passing through B

E.3529



1 a Draw the line perpendicular to the line (D) passing through the point A.

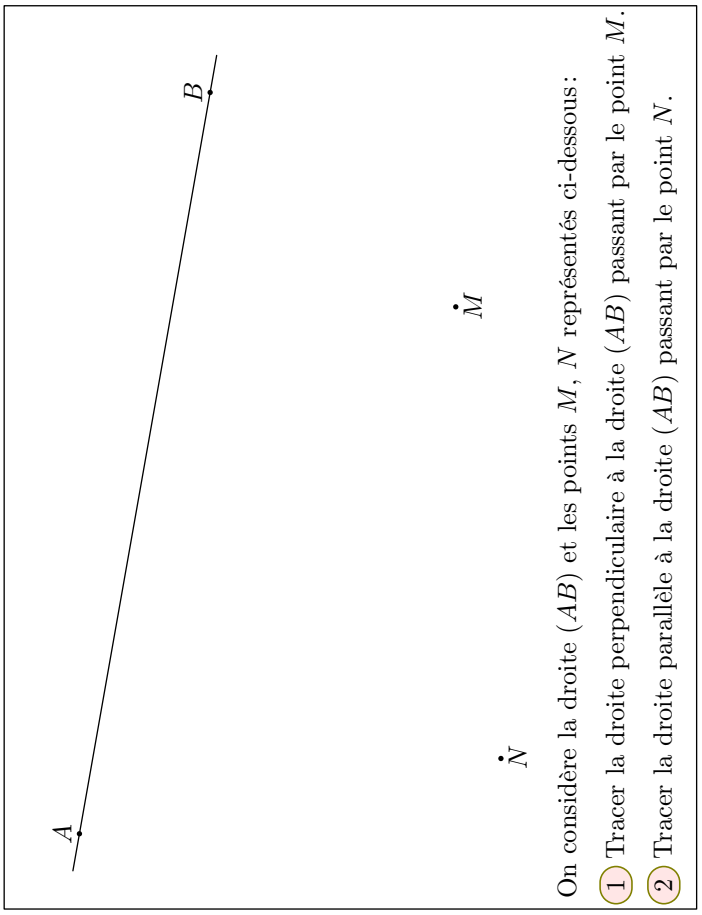
b Draw the line perpendicular to the line (d) passing through the point B.

2 a Draw the line parallel to the line (D) passing through the point C.

b Draw the line parallel to the line (d) passing through the point D.

c Draw the line parallel to the line (Δ) passing through the point A.

E.10712

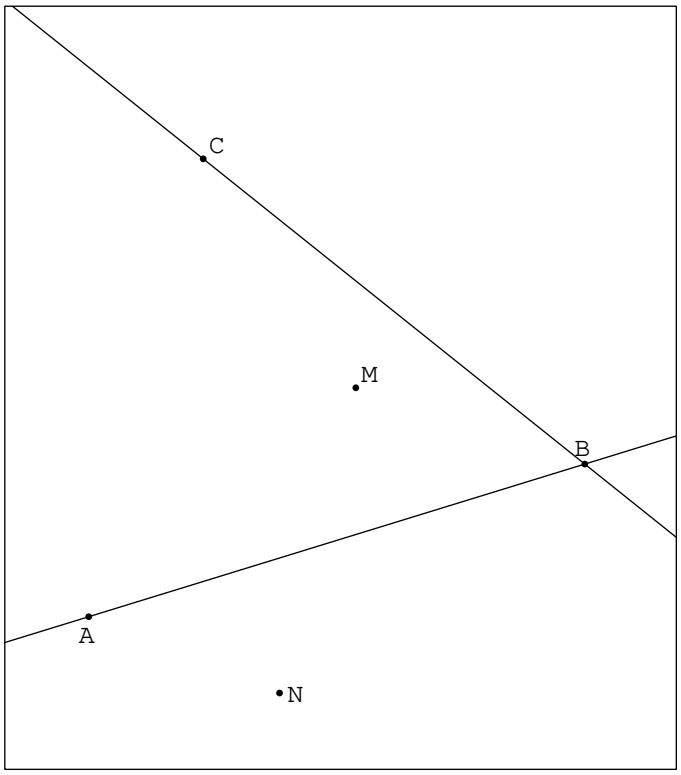


On considère la droite (AB) et les points M, N représentés ci-dessous :

1 Tracer la droite perpendiculaire à la droite (AB) passant par le point M.

2 Tracer la droite parallèle à la droite (AB) passant par le point N.

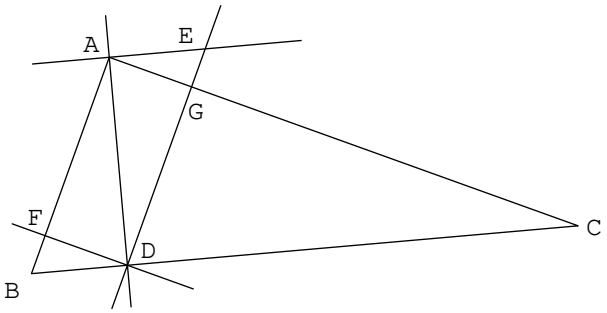
E.6212



1. Draw the line (d) perpendicular to the line (AB) passing through the point N.
2. Draw the line (Δ) parallel to the line (BC) passing through the point M.
3. a) Note P the point of intersection of the straight lines (d) and (Δ).
   b) Draw the line parallel to the line (AB) passing through the point P

6. *Notations: perpendicular and parallel*

E.1508 Consider the configuration below:



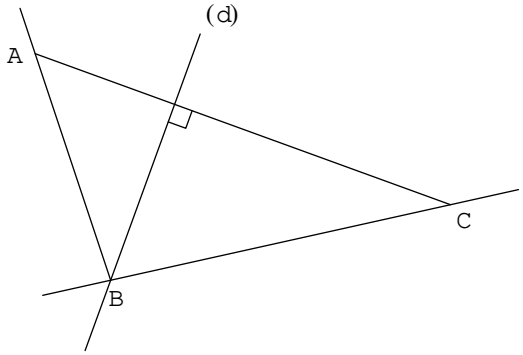
Complete the dotted lines below with the symbols $\parallel$ and $\perp$:

a) (AB) ..... (FD) b) (FD) ..... (AE)

c) (AC) ..... (FB) d) (AG) ..... (FD)

Hint: use the ruler and square to check the accuracy of the answers.

E.6491 We consider the following configuration:



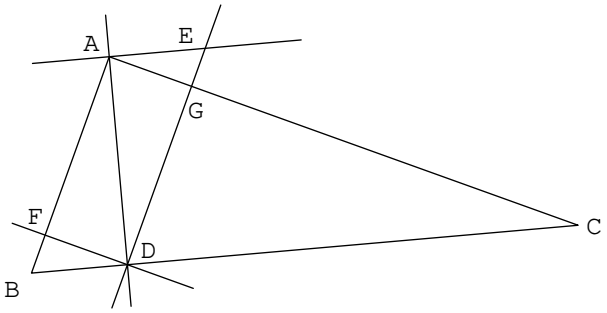
Complete the plot program below with the appropriate notations:

a) Draw AB b) Plot AC c) Trace BC

d) Draw the line (d) such that:

..... $\perp$ ..... ; ..... $\in$ .....

E.10005 We consider the configuration below :



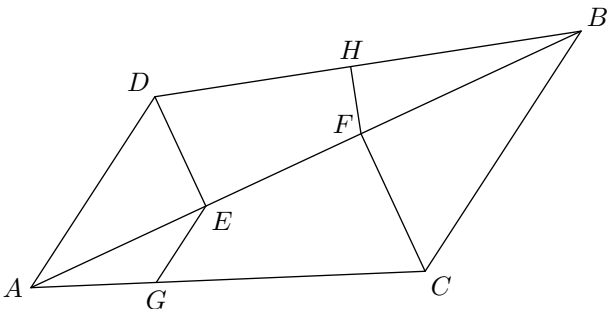
If possible, complete the blanks below with the symbols $\parallel$ and $\perp$.

(a) (GC) ..... (BF) (b) (EG) ..... (AC)

(c) (AF) ..... (AD) (d) (AD) ..... (BC)

Hint : answers are checked for accuracy with the ruler and square.

E.10763 Consider the following figure :

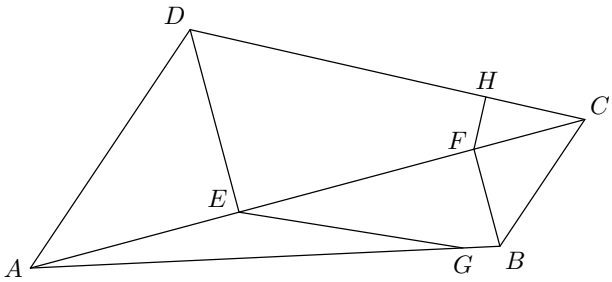


Complete, if possible, the dotted lines below with the symbols $\perp$ and $\parallel$:

(a) $(DE)\ldots(FB)$ (b) $(DA)\ldots(BC)$ (c) $(FH)\ldots(DB)$

(d) $(FC)\ldots(DE)$ (e) $(DE)\ldots(FH)$ (f) $(DB)\ldots(CF)$

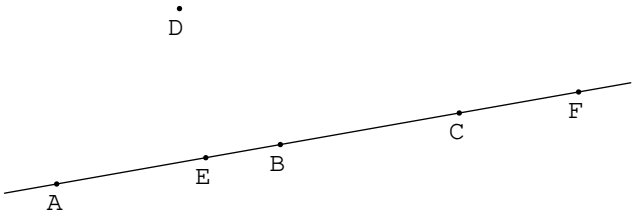
E.10782 Consider the following figure :



From the points indicated on the figure, indicate all pairs of parallel lines and all pairs of perpendicular lines.

7. *Rating : Membership*

E.1509 We consider six points of plan represented below :

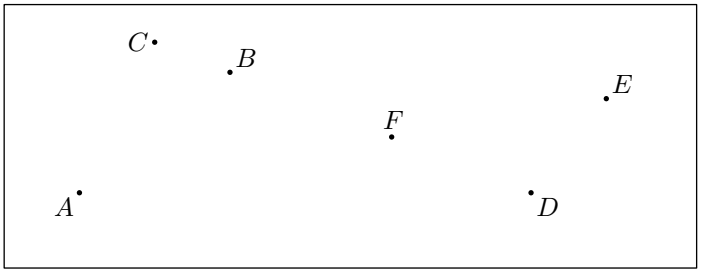


Copy and complete the dotted by the symbol corresponding among $\notin$ and $\in$:

(a) D ... (AE) (b) A ... $[EC]$ (c) B ... $[AE]$

(d) C ... $[FE)$ (e) E ... $[BD]$ (f) B ... $[AC]$

E.10765 Consider the six points of the plane shown below :



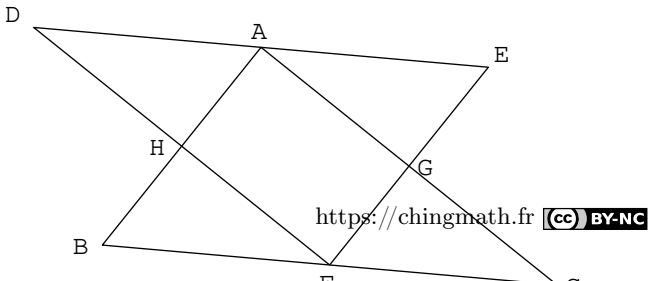
Complete the dotted lines below with the symbols $\notin$ and $\in$:

(a) $E\ldots[FE)$ (b) $A\ldots(FE)$ (c) $D\ldots[FC]$

(d) $F\ldots[AE]$ (e) $B\ldots(AE)$ (f) $C\ldots[DF)$

8. *Notations : memberships, perpendiculars, parallels*

E.1511 We consider the configuration following of several points of plan :



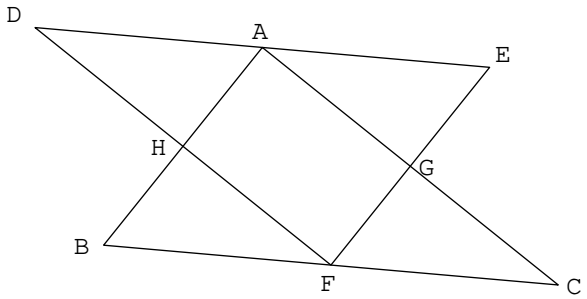
Copy and complete the dotted with the symbols $\in$, $\notin$, $/\!/$ and $\perp$.

(a) (AB) ..... (FG) (b) (FE) ..... (AG)

(c) H ..... $[FD]$ (d) B ..... $[FC]$

Indication : one checks theaccuracy of answers with the-help of the rule and the square.

E.2745 Consider the following configuration of several points on the plane :



Copy and complete the dotted lines using the symbols $\in$, $\notin$, $/\!/$ and $\perp$.

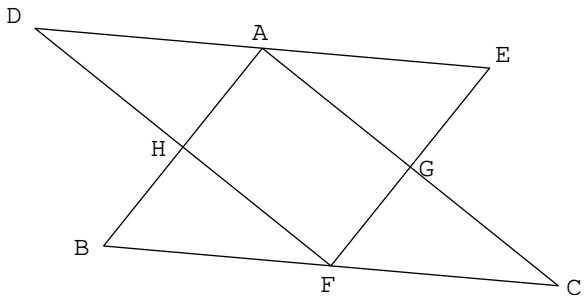
(a) (AE) ..... (BC) (b) (HF) ..... (FG)

(c) D ..... $[AE)$ (d) G ..... $[EF]$

(e) B ..... (HG) (f) (AH) ..... (GC)

Hint : answers are checked for correctness using ruler and square.

E.10007 We consider the following configuration of several points in the plane :



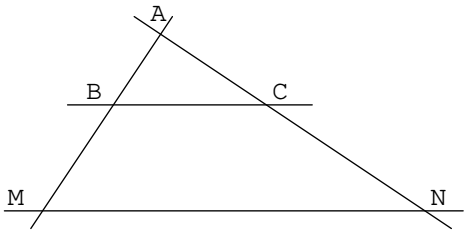
Copy and complete the blanks using the symbols $\in$, $\notin$, $/\!/$ and $\perp$.

(a) G ..... (AH) (b) (BF) ..... (AE)

(c) D ..... $[EA)$ (d) (BH) ..... (GC)

Hint : answers are checked for accuracy with the ruler and square.

E.1520 We consider five points of plan defining the figure below :



Copy and complete, if possible, the dotted to using the symbols $\notin$, $\in$, $\perp$ and $/\!/$

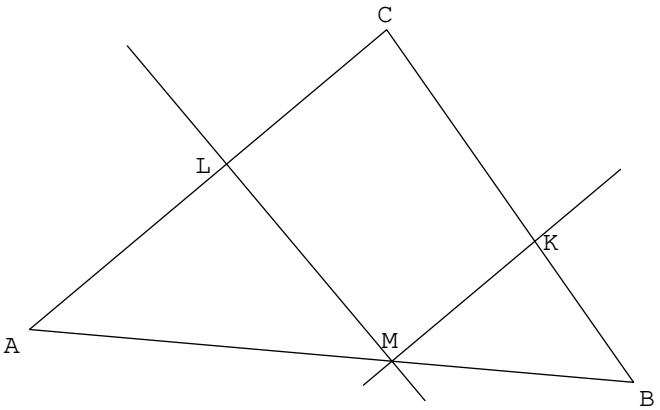
(a) A ..... $[BM)$ (b) N ..... (CA)

(c) (BM) ..... (AC) (d) (BC) ..... (MN)

(e) (AM) ..... (BC) (f) (NC) ..... (BC)

Indication : one checks theaccuracy of answers with the-help of the rule and the square.

E.10231 Consider the configuration below :

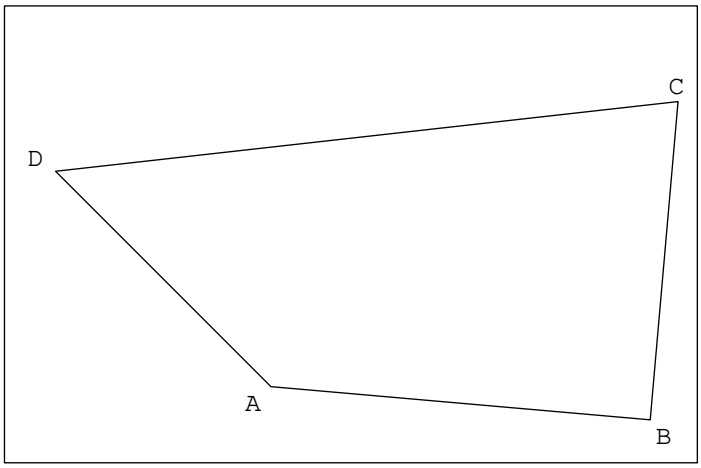


If possible and with the notations $\in$, $\notin$, $/\!/$, $\perp$, copy and complete the blanks below :

(a) $A \ldots (LC)$ (b) $B \ldots [KC)$ (c) $A \ldots [MB]$

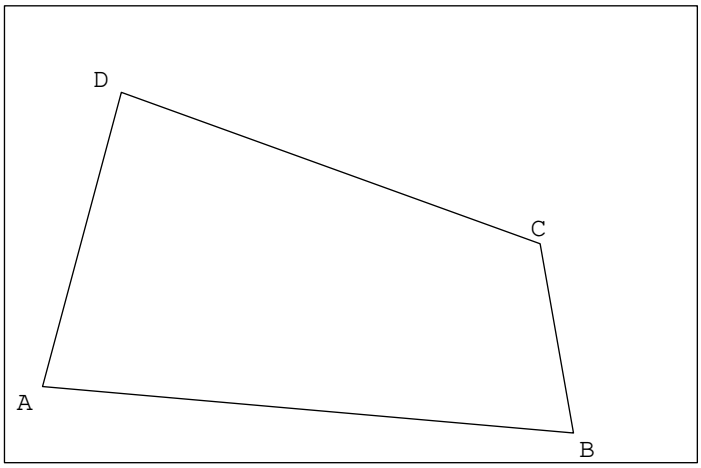
(d) $(AC) \ldots (BC)$ (e) $(AC) \ldots (MK)$ (f) $(AC) \ldots (LM)$

E.10206 Consider the quadrilateral $ABCD$ below:



1. Draw the straight line (Δ) such that: $(\Delta)\perp(AB)$ and $A\in(\Delta)$
2. Draw the straight line (d) such that: $(d)\parallel(AD)$ and $B\in(d)$
3. Draw the straight line (d') such that: $(d')\perp(BC)$ and $C\in(d')$

E.10230 Consider the quadrilateral $ABCD$ below:

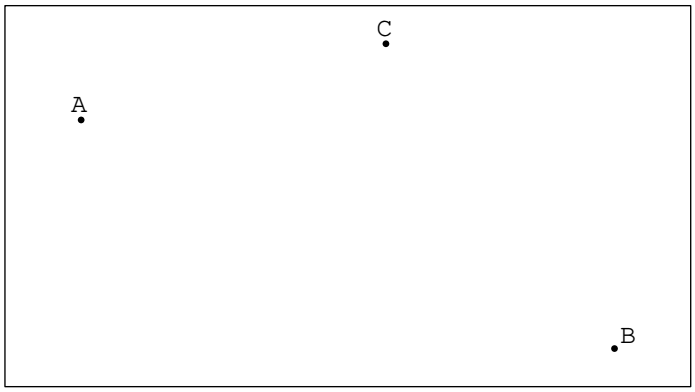


1. Draw the straight line (Δ) such that: $(\Delta)\perp(AD)$ and $D\in(\Delta)$
2. Draw the straight line (d) such that: $(d)\parallel(AD)$ and $B\in(d)$
3. Draw the straight line (d') such that: $(d')\perp(BC)$ and $C\in(d')$

E.6160 The following plot program is considered:

- Draw **the line passing through the points A and B.**
- Draw **the segment having for extremity the points B and C.**
- Trace **the half-line having for origin the point C and passing through the point A.**
- Place a point M in the plane such that **the point M belongs to the segment of extremities the points B and C.**
- Draw the line (d) in the plane such that **the point M belongs to the line (d)** and such that **the line (d) is perpendicular to the line passing through the points B and C**
- We note N the point of intersection of the line (d) with **the line passing through the points A and B.**

1. Copy the entire plot program, simplifying the bolded sentences using mathematical notation.
2. Perform the plot program in the frame given below:



9. *Translate the notations into French*

E.1521 Translate the following sentence entirely into French without using any mathematical notation:

Draw the line (d) such that $(d)\parallel(AC)$ and $C\in(d)$

E.1519 Transform each of the sentences below into sentences written **entirely** in French:

1. Trace $[TU]$ such that $TU=5\,cm$.
2. Trace (AB).

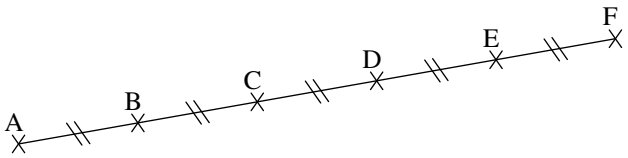
Draw the straight line (d) such that $A\in(d)$ and $(AB)\perp(d)$.

E.1517 Transform each of the sentences below into sentences written entirely in French:

1. Tracer $[BA)$
2. Trace $[AB]$ such that $AB=3\,cm$
3. Trace (AB) and place $C\in(AB)$

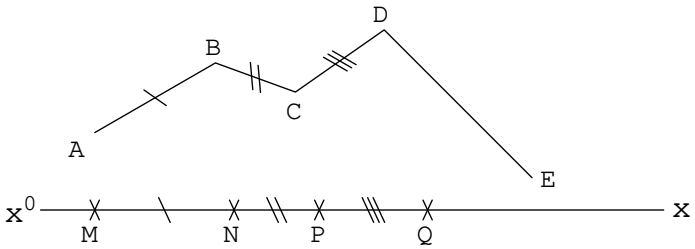
10. *Coding and distance*

E.2322 Consider the six aligned points shown below:



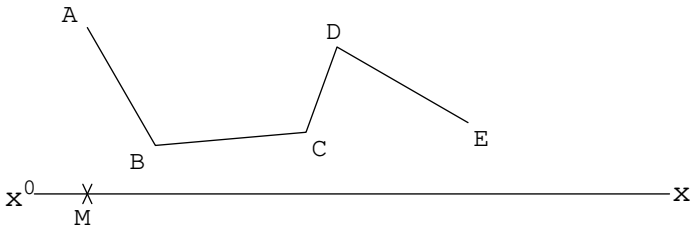
1. Name the set of segments that have the same length as the segment $[BD]$.
2. Of which segment B is it the middle?
3. Name all the segments for which the point C is the midpoint.

E.2786 Consider the broken line $ABCDE$ and the points M, N, P, Q belong to a line (xx').



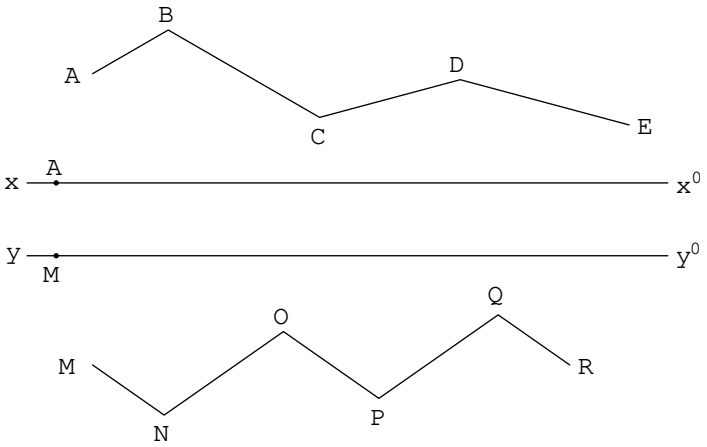
1. Information, about the measurement of various segments, is carried on this drawing; check, using the compass, for their accuracies.
2. Place the point R on the line (xx') verifying the equality of length: $DE = QR$
3. Measure the total length of the broken line $ABCDE$.

E.2787 Consider the broken line $ABCDE$ below:



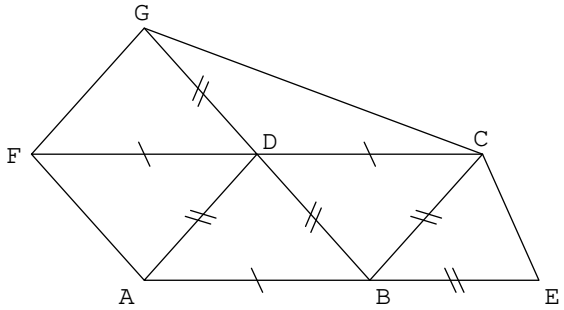
1. Plot the broken line on the line (xx').
2. Deduce the total length of this broken line.

E.3635 We consider the following two broken lines:



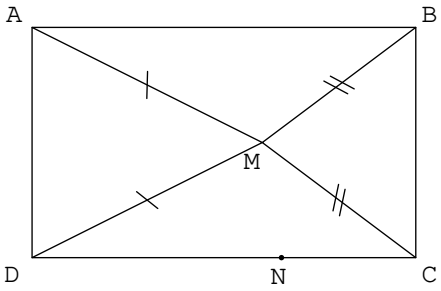
1. Which of these two broken lines do you think is larger?
2. Using the compass, plot the broken line from A to E on the line (xx'); do the same for the line from M to R on the line (yy').
3. Now compare the length of these two broken lines.

E.2788 The figure below is composed of several triangles:



1. Complete the blanks below with the signs $<$, $>$, $=$ in order to compare each length pair:
   - a) $AB \dots CD$
   - b) $AB \dots AD$
   - c) $CE \dots DB$
   - d) $GB \dots FC$
   - e) $FC \dots AE$
2. Do the same:
   - a) $FD + DA \dots AD + DC$
   - b) $AD + DB \dots EB + BD$
3. Do the same:
   - a) $AD + DB \dots AB$
   - b) $GD + DC \dots GC$
   - c) $CD + DF \dots FC$

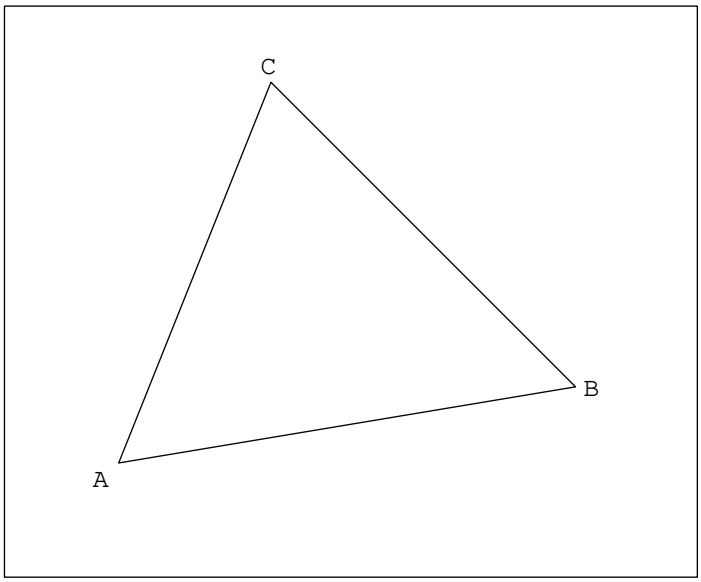
E.3634 Consider the rectangle $ABCD$ shown below; a point M contained within the rectangle; N is a point on the segment $[DC]$.



1. Encodings are present in the figure, specify their meanings.
2. a) What feature does the triangle AMD have?
   b) Compare the two triangles ABM and CDM.
3. Compare the following lengths using the symbols: $=$; $<$; $>$
   - a) $DA \dots DM + MA$
   - b) $DC \dots DM + MC$
   - c) $DC \dots DN + NC$
   - d) $DN \dots DC + CN$

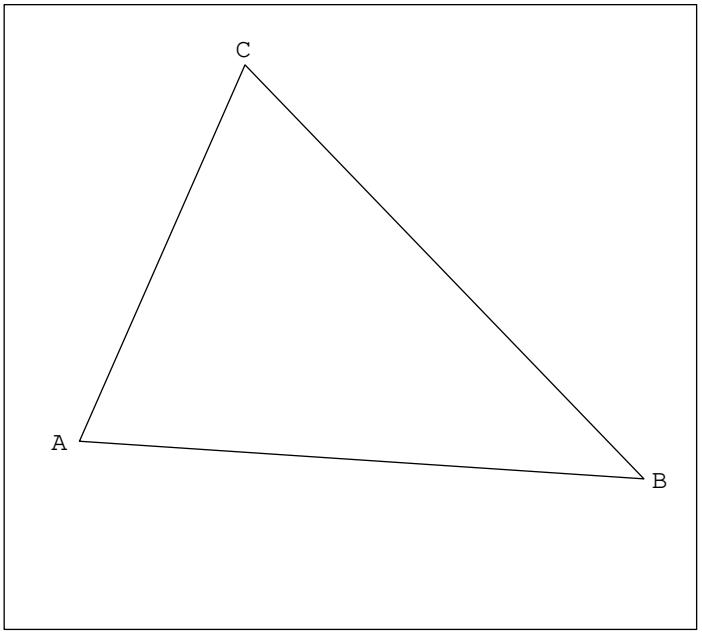
11. *Drawing perpendiculars with the compass*

E.2340 Consider the triangle ABC below:



1. Complete the figure above using the compass and the ungraduated line. The construction lines must appear on the figure:
   - a. Draw the line perpendicular to (AB) passing through the point C.
   - b. Draw the line passing through B and forming a right angle with (AC).
   - c. Draw the line passing through A and perpendicular to the line passing through the points B and C.
2. What do you notice?

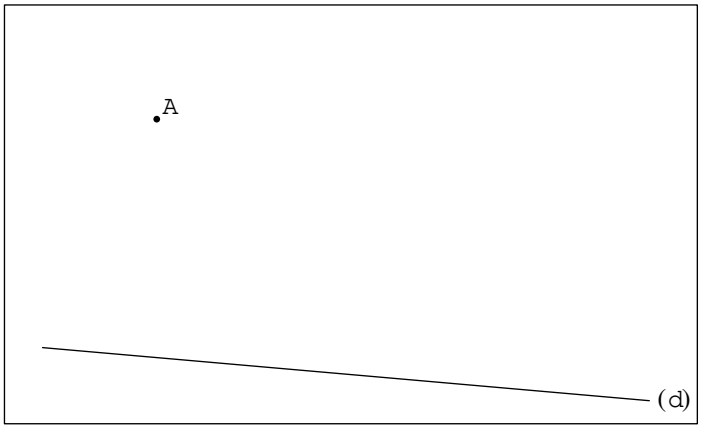
E.2821 Using the compass and the ruler, for each side of the triangle, draw the perpendicular to that side passing through the vertex opposite that side:



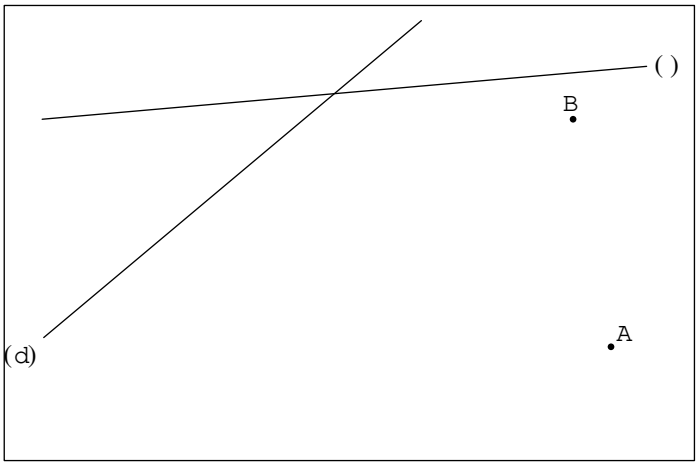
Construction lines must be left on the figure.

12. *Drawing parallels with the compass*

E.6556 Using the compass and unsharpened straightedge, draw the line parallel to the line (d) and passing through the point A.

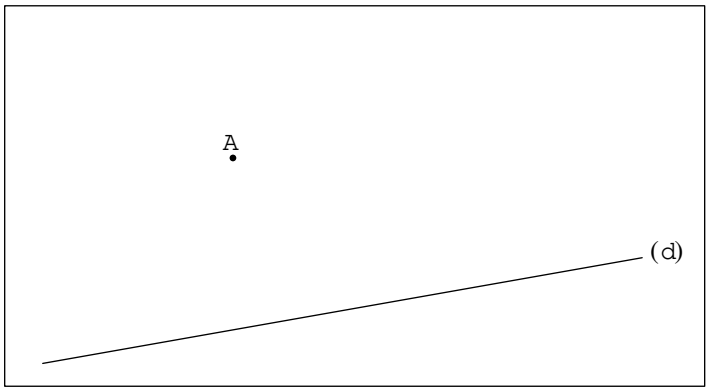


E.6557 Consider the figure below:



1. Draw the line (Δ') parallel to the line (Δ) passing through the point A.
2. Draw the line (d') parallel to the line (d) passing through the point B.
3. a. Name the point C intersection of the straight lines (d') and (Δ').
   - b. Draw the triangle ABC.

E.1458 Using your compass, draw the parallel to the line (d) passing through the point A.

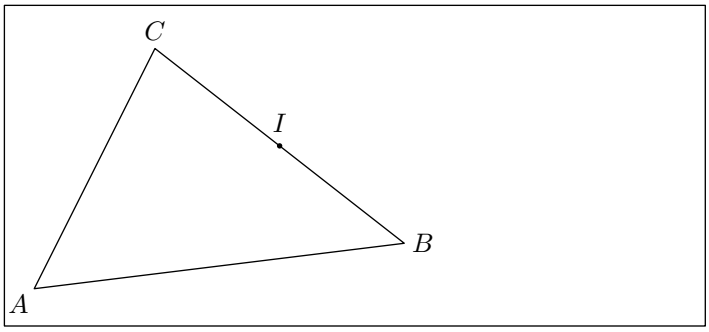


We'll leave the construction lines visible

E.2101

Note: All construction lines must be drawn exclusively with a compass and an unmarked ruler and must be retained.

Let ABC be a triangle and I the midpoint of $[BC]$.
Draw the line (d) parallel to (AB) passing through point I in the figure below.

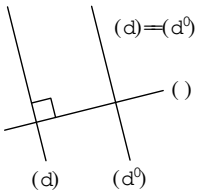


13. *Theorems*

E.1546

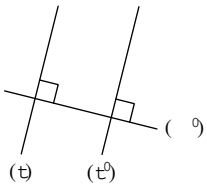
1 a Describe all the information provided with the first figure.

b What can you say about the relative position of the straight lines (d') and (Δ)? Quote the theorem allowing such a statement.

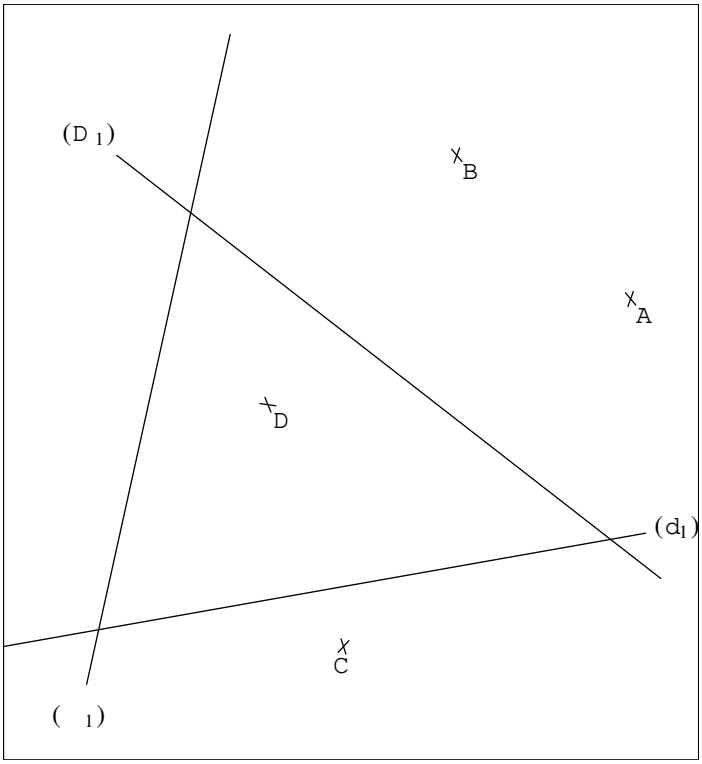


2 a Describe all the information provided with the second figure.

b What can you say about the relative position of the straight lines (t) and (t')? Quote the theorem allowing such a statement.



E.2713



1 a Draw the line (d_2) parallel to the line (d_1) passing through the point A.

b Draw the line (d_3) parallel to the line (d_1) passing through the point B.

c What can you say about the relative position of the straight lines (d_2) and (d_3)? Justify your answer.

2 a Draw the line (Δ_2) perpendicular to the line (Δ_1) passing through the point C.

b Draw the line (Δ_3) perpendicular to the line (Δ_1) passing through the point B.

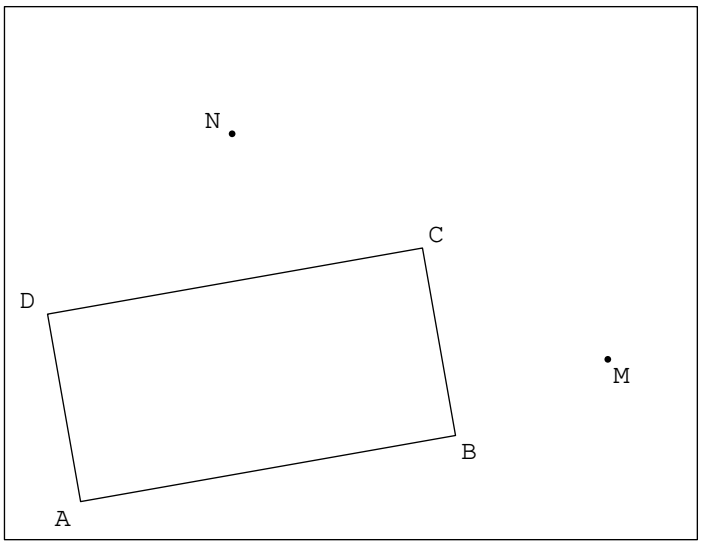
c What can you say about the position of the straight lines (Δ_2) and (Δ_3)? Justify your answer.

3 a Draw the line (D_2) parallel to the line (D_1) passing through the point C.

b Draw the line (D_3) perpendicular to the line (D_1) passing through the point D.

c What can you say about the relative position of the straight lines (D_2) and (D_3)? Justify your answer.

E.6566 Consider the configuration given below where the quadrilateral $ABCD$ is a rectangle:



1 Plots should be made with ungraded ruler and compass:

a Draw the line (d) parallel to the line (CD) through the point M.

b Draw the line (Δ) perpendicular to the line (DC) through the point N.

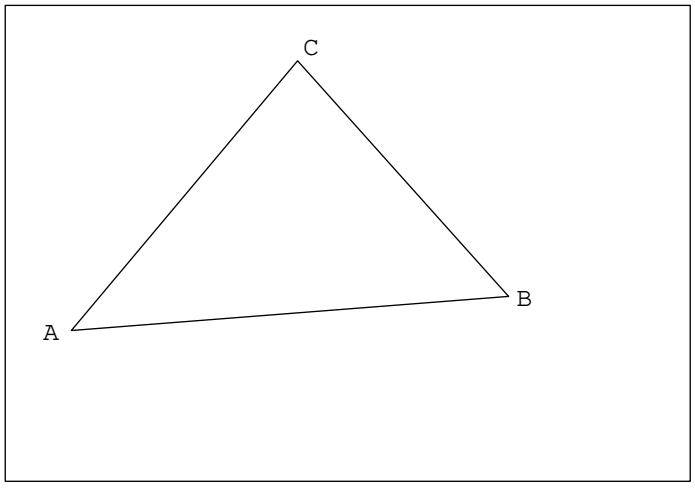
(construction lines must be apparent).

2 For each of the questions below, name the theorem to justify the proposed relationship:

a $(\Delta) \perp (AB)$ b $(d)\text{//}(AB)$

14. *Carry out a construction program*

E.2240 Consider the triangle ABC given below:



Complete the figure with the following plot program:

1 Draw the line (d) passing through C and perpendicular to the line (AB).

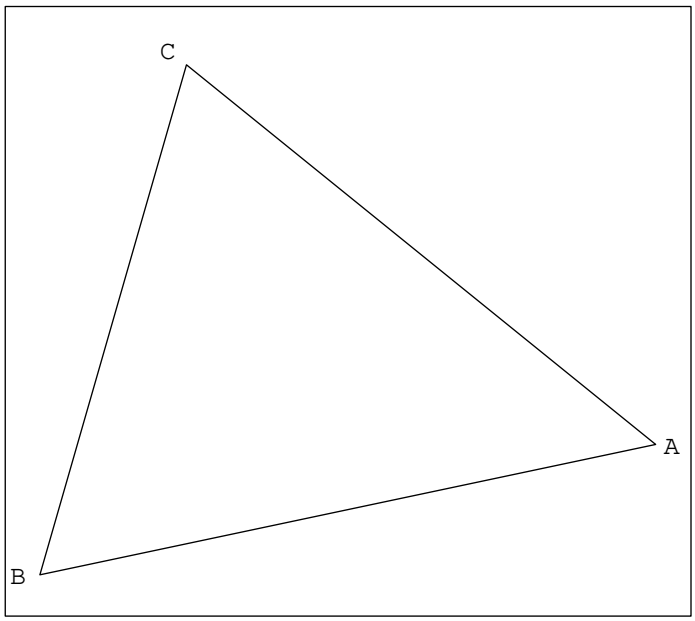
2 Name M the point of intersection of (d) and (AB).

3 Trace (d') such that $(d')\text{//}(AC)$ and $M \in (d')$.

4 Name N the point of intersection of the line (BC) and (d').

5 Draw the line (Δ) passing through the point B and parallel to the line (AC).

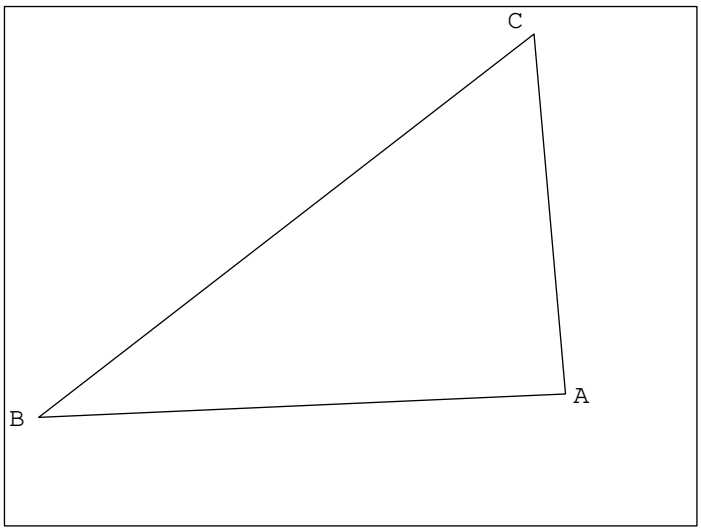
E.2714 Consider the triangle ABC below:



Draw the following lines in the figure above:

1. Draw the line (d) passing through the point C and perpendicular to the line (AB).
2. Name T the point of intersection of the line (d) with the line (AB).
3. Draw the line (d') passing through the point T and perpendicular to the line (AC).
4. Name M the point of intersection of the line (d') with the line (AC).
5. Draw the line (Δ) parallel to the line (AB) passing through the point M.
6. Name S the intersection of the line (Δ) with the line (BC).
7. Draw the line (Δ') passing through the points S and T.

E.2744 Consider the triangle ABC below:



Draw the following lines in the figure above:

1. Draw the line (d) perpendicular to the line (BC) and passing through the point A.
2. Name T the point of intersection of the line (d) and the line (BC).
3. Draw the line (d') parallel to the line (AB) and passing through the point T.
4. Name M the point of intersection of the straight lines (d') and (AC).
5. Draw the line (Δ) passing through the point M and parallel to the line (BC).
6. Name S the point of intersection of the line (AB) and (Δ).
7. Draw the line (ST).

E.1507 Carry out the following plot program:

1. Place three points A, B and C not aligned.
2. Draw the half-lines $[CA)$ and $[CB)$.
3. Draw the segment $[AB]$.
4. Place a point I belonging to segment $[AC]$.
5. Draw the line (d) parallel to (AB) passing through the point I.
6. Draw the perpendicular to the line (BC) passing through the point B.

E.2218 Carry out the following plot program:

1. Place three points A, B, C not aligned.
2. Draw the triangle ABC.
3. Draw the line (d) perpendicular to the line (AB) passing through the point C.
4. Name I the intersection of the straight lines (AB) and (d).
5. Draw the line (Δ) parallel to the line (AC) passing through the point I.

E.1505 Perform the figure corresponding to program of plot following:

1. Place three dots A, B, C non-aligned.
2. Draw the triangle ABC and draw the straight (BC).
3. Draw the straight (d) perpendicular to the straight (BC) passing through the point A.
4. Name M the intersection of straight (d) and (AB).
5. Draw the line (d') in parallel to the line (BC) passing through the point A.

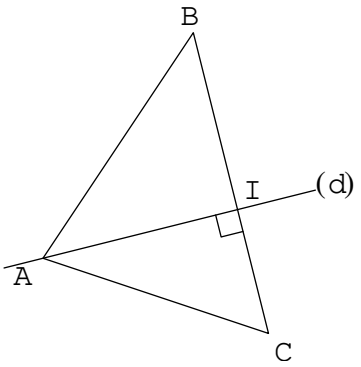
E.1668

1. Errors in notations and expressions punctuate the plot program below; recopy this program correcting the errors:
   a. Trace AB such that $[AB]=7\,cm$.
   b. Trace $[AX)$ such that $\widehat{A}=85^o$.
   c. Tracer $[AY)$ such that $\widehat{B}=35^o$.
   d. Call C where AX and BY intersect.
   e. Place M center of (AB).
   f. Trace d such that d // to (AC) and passing through M.
   g. Let us note L the point of intersection of (d).
2. Perform the above plot program.

15. *Write a construction program*

E.2209

Consider the figure below:



1. Two plot programs are offered. Which of the two correctly plots the figure:

   a. Place three unaligned points and draw the triangle ABC.
   Place I on segment $[BC]$.
   Draw (AI) perpendicular to the line (BC); name (d) this line.

   b. Place three unaligned points and draw the triangle ABC.
   Draw the line (d) passing through the point A and perpendicular to the line (BC).
   Name I the point of intersection of the two straight lines (d) and (BC).

2. So what can we say:

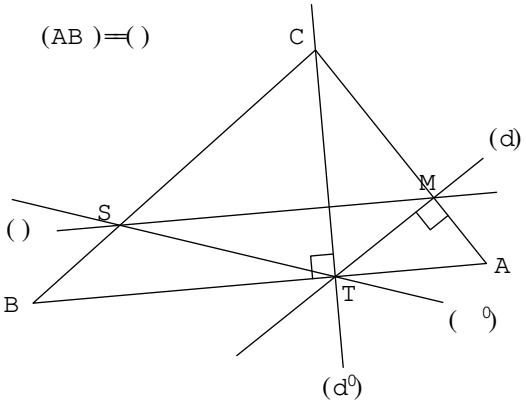
   - This is the point I that is used to draw the line (AI),
   - or is it the straight line (d) that yields I?

E.2221

Consider the triangle below where:

- The point M is the point of intersection of the lines (Δ), (d) and (AC);
- The point T is the point of concurrence of the straight lines (d), (d') and (AB);
- The point S is the point of concurrence of the lines (Δ), (Δ') and (BC);

As the questions progress, the figure at the end of the exercise will be completed; the aim of this exercise is to find the plotting program for reconstructing this figure.



1. First, we'll study the different characteristics of these four straight lines; complete the table below:

	This straight line passe by points	Perpendicular ou parallel to straight line
(d)		
(d')		
(Δ)		
(Δ')		

Now let's identify the order of these lines and reproduce the figure:

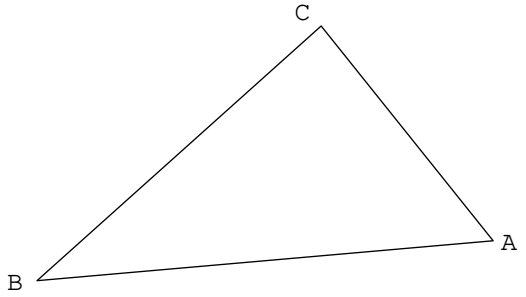
2. a. Explain that the straight line (d) cannot be drawn first in the figure below.

   b. Explain that only the line (d') can be drawn first.

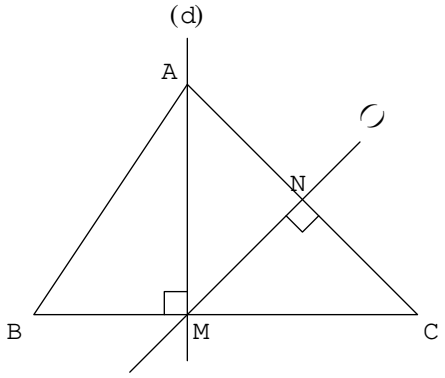
   c. Name the new point that appears on the figure.

3. Looking again at the table in question 1, what is the line that can currently be drawn on the figure.

4. Draw the last two straight lines.



E.2214 We consider the following configuration :



1. Choose from the following three plot programs the one that will produce the following figure :

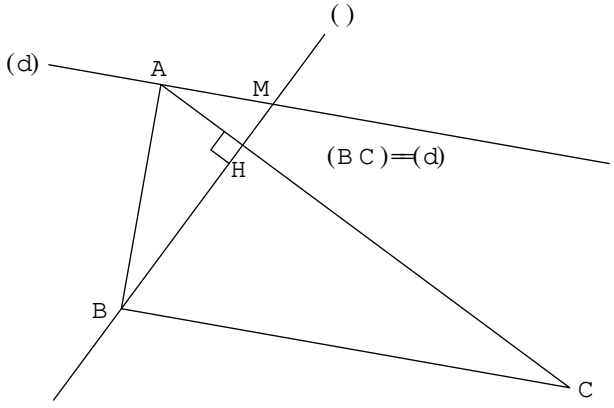
   a. Draw the triangle ABC.
   Place a point N on segment $[AC]$ and a point M belonging to segment $[BC]$.
   Draw the line (Δ) through the points M and N perpendicular to the line (AC).
   Draw the line (d) through the points M and A perpendicular to the line (BC).

   b. Draw the triangle ABC.
   Place a point M belonging to segment $[BC]$.
   Draw the line (d) through the points A and M which is perpendicular to the line (BC).
   Draw the line (Δ) perpendicular to the line (AC) through the point M.
   Name N the point of intersection of the lines (Δ) and (d).

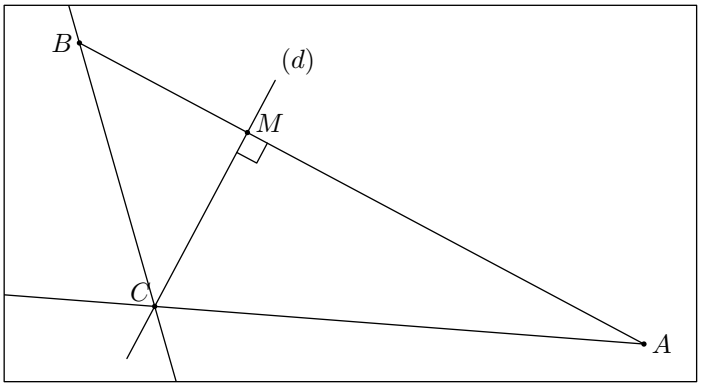
   c. Draw the triangle ABC.
   Draw the line (d) perpendicular to the line (BC) and through the point A.
   Name M the point of intersection of the lines (d) and (BC).
   Draw the line (Δ) perpendicular to the line (AC) through the point M.
   Name N the point of intersection of the lines (Δ) and (AC).

2. Perform the chosen plot program to verify that the same figure is obtained.

E.1504 Give the drawing program for the figure below :



E.10783 Consider the configuration below :

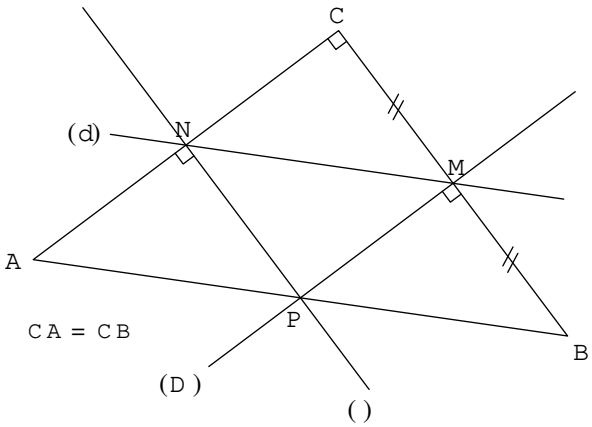


Write a drawing program to obtain this figure.

Hint : We will begin this drawing program by "*placing the three points A, B, C not aligned*".

E.3781

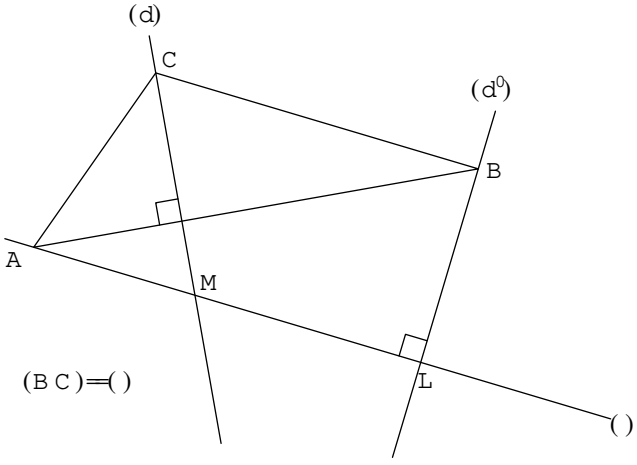
1. Determine the drawing program of the figure below starting with "*Draw a triangle ABC isosceles rectangle in C. Place M the middle of the segment* $[BC]$."



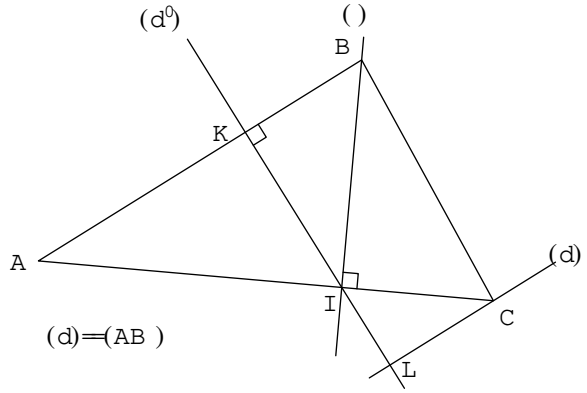
2. a. Draw the circle $\mathscr{C}$ with center P and having segment $[AB]$ for diameter.

   b. What do we notice?

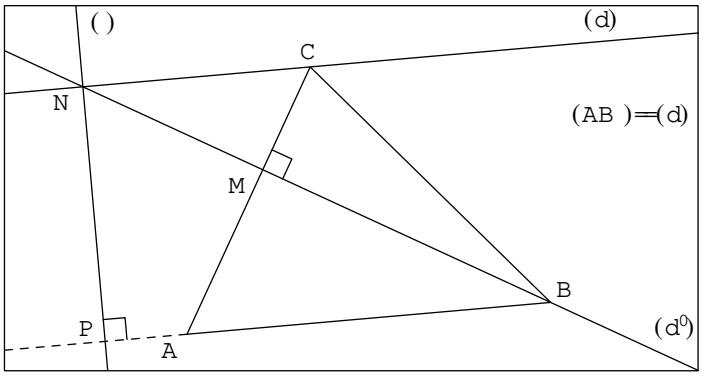
E.1513 Give the program plotted to obtain the figure below :



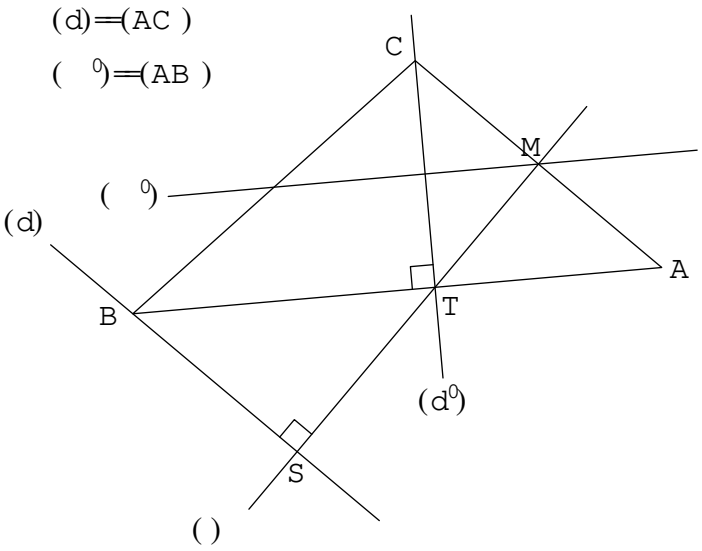
E.1514 Give the drawing program for the figure below:



E.2241 Write the plot program to obtain the figure below:



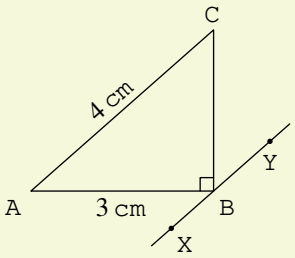
E.1506 Write the program to plot the following figure:



16. *Us-math*

E.9624

With the American notations: below is given the construction program of the triangle ABC:



In $\triangle ABC$, we have:
$\overline{AB} \perp \overline{BC}$
$AB = 3\,cm$
$BC = 4\,cm$
The points X and Y are placed such that: $\overline{AC} \parallel \overleftrightarrow{XY}$

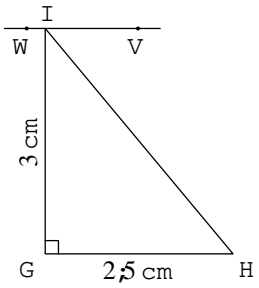
(1) Construct the triangle DEF whose construction program is given below:

$\triangle DEF$ verifies the following conditions:

$DF = 4\,cm$; $EF = 6\,cm$; $\overline{DE} \perp \overline{EF}$

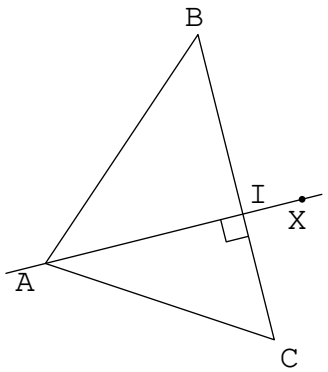
The points R and S are placed such that: $\overleftrightarrow{RS} \parallel \overline{DF}$

(2) Using American notations, give the construction program for the GHI triangle shown opposite.



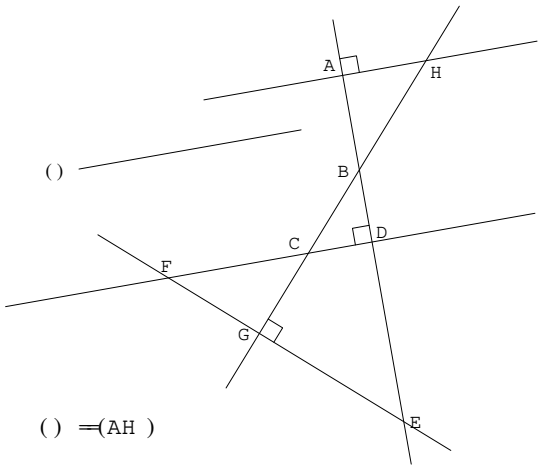
E.9625

Using American notation, give the plotting program for the figure opposite.



17. *Share*

E.1503



( ) =(AH)

1. Copy and complete the following lines using the symbols $\in$, $\notin$, $\perp$, $/\!/$, if possible:

   a. A ... $[BE)$
   b. B ... $[ED)$
   c. B ... $[ED]$
   d. G ... (CD)
   e. (AH) ... (BD)
   f. (AB) ... (GC)
   g. (HA) ... (CF)
   h. (BA) ... (CF)

2. Using the indications on the figure, name the theorem that allows you to state that $(AH)/\!/(FD)$

3. Name the theorem that allows you to assert that $(\Delta)/\!/(FD)$

E.1512

1. Translate the program of plot following entirely in French without knowing to use of codings mathematics:

   a. Place A, B and C unaligned.
   b. Tracer $[AB]$
   c. Draw (BC)
   d. Tracer $[AC)$ et placer M tel que $M \in [AC)$ et tel que $AM = 3cm$
   e. Tracer (d) tel que $C \in (d)$ et $(d)/\!/(AB)$

2. Perform this program of traces.