

1. Workforce

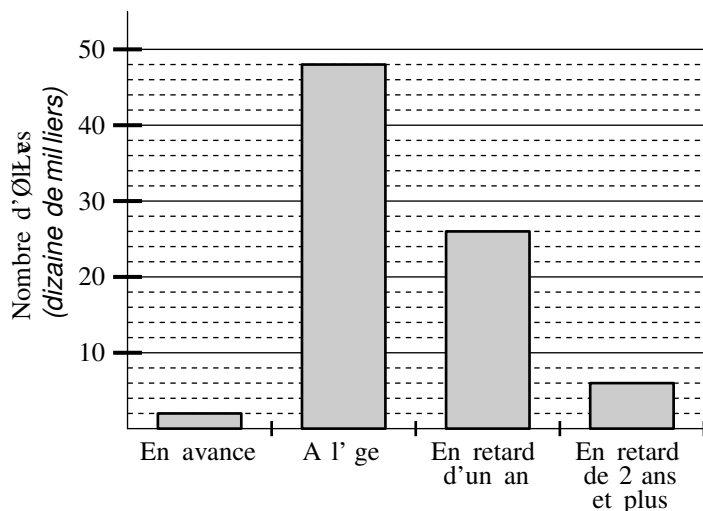
E.5632    Adrian surveys the members of his entourage to find out how many times everyone has been to the movies in the past month. Here are the results:

2 ; 3 ; 1 ; 0 ; 2 ; 4 ; 2 ; 1 ; 0
1 ; 1 ; 0 ; 2 ; 0 ; 1 ; 3 ; 1

- 1 Give the total number of people in this study.
- 2 Give the headcount of people who went to the movies exactly twice in the past month.

2. Frequencies

E.5634    The bar chart below shows the number of students enrolled in the schools and the difference in their age in relation to their level of schooling at the beginning of the school year 2003:



- 1 What is the number of students “at age”?
- 2
 - a Determine the total number of students enrolled during the year 2003.
 - b Deduct the class frequency of students “at age” rounded to the nearest thousandth.

3. Classes and staff

E.5635    Here are the heights, expressed in meters, of students in a fifth grade class:

1.42 ; 1.50 ; 1.38 ; 1.56 ; 1.62 ; 1.61
1.72 ; 1.65 ; 1.42 ; 1.45 ; 1.54 ; 1.32
1.44 ; 1.56 ; 1.58 ; 1.45 ; 1.73 ; 1.74
1.62 ; 1.46 ; 1.54 ; 1.52 ; 1.71 ; 1.73

- 1 Give the total size of the study population.
- 2 Complete the headcount table below:

Taille (en m)	[1.3 ; 1.4[	[1.4 ; 1.5[	[1.5 ; 1.6[	[1.6 ; 1.7[	[1.7 ; 1.8[
Number					

4. Classes and frequencies

E.5633    Here are the grades of students in a fifth grade class:

12 ; 16 ; 8 ; 11 ; 10 ; 14 ; 7 ; 5
15 ; 12 ; 12 ; 8 ; 10 ; 12 ; 15 ; 6
7 ; 13 ; 14

- 1 Give the total size of the study population.
- 2
 - a Give the class size “the student’s grade is between 10 inclusive and 12 exclus”.

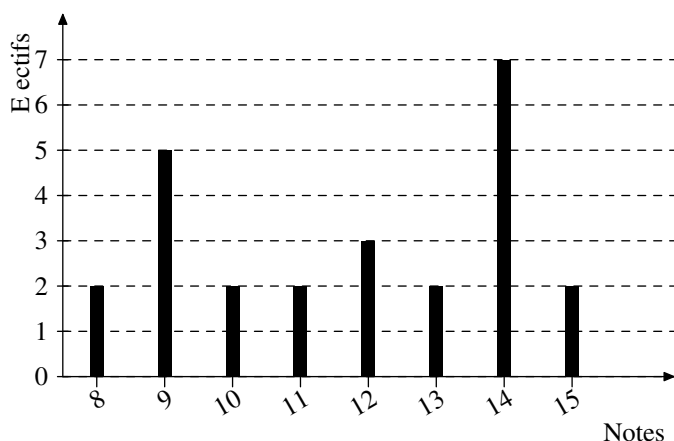
- b Complete the following headcount table by arranging the values in the table:

Note	[4;6[	[6;8[	[8;10[	[10;12[	[12;14[	[14;16[	[16;18[
Headcount							

- 3 Give the frequency, rounded to the nearest thousandth, corresponding to students who had between 10 inclusive and 12 exclusive.

5. Bar graph: reading

E.7913    The bar graph below shows the distribution of scores on a math test by students in a class of 3^e.



- 1 How many students are in this class?
- 2
 - a How many students got 12 on this test?
 - b How many students got at least 12 on this test?
- 3 Which grade groups the most students?

6. Bar graphs: constructions

E.1563    Here are some data published by the CIA in 2004, on the number of Internet users in a number of European countries:

	Allemagne	France	Pologne	Royaume Uni
Nombres d'utilisateurs (in millions)	82	60	40	60

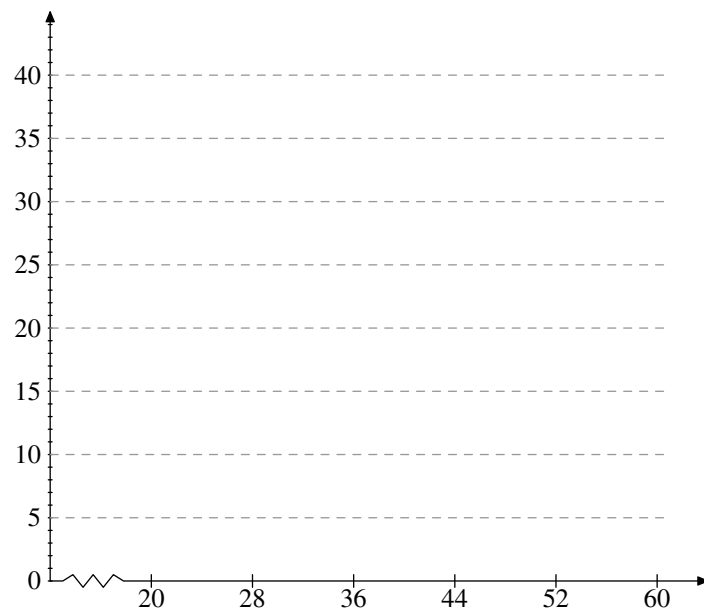
Using the scale "1 cm = 10 million utilisateurs", construct the bar chart representing this statistical study.

E.906     In a company, the age of 125 employees has been studied.

The results of this study are given in the following table:

Age	[20; 28[	[28; 36[	[36; 44[	[44; 52[	[52; 60[	Total
Nombre de salariés n_i	15	35	40		10	
Fréquences en %						

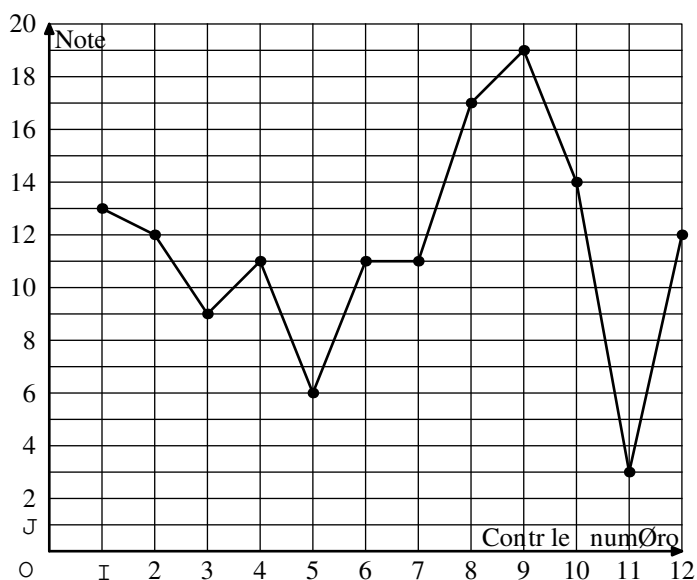
- 1 Complete the table above.
- 2 Draw the histogram of the numbers using the grid below.



- 3
 - a How many employees are under 44 years old?
 - b How many employees are 36 years old and over?
 - c What percentage of employees are between 52 years old and 60 years old?

7. Cartesian graph: reading

E.7914    On the graph below, we have plotted Mathieu's math scores throughout the school year.



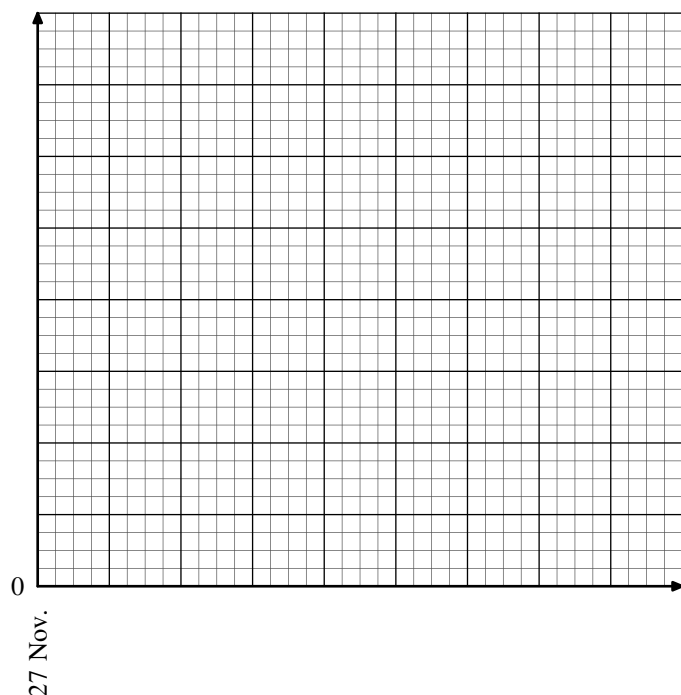
- 1 On which homework assignment did Mathieu get his best grade?
- 2 How many grades did Mathieu get that were strictly below average?

8. Cartesian graph: constructions

E.2812 Mathias has compiled a table of notes:

Date	27 Nov.	28 Nov	1 Déc	4 Déc	6 Déc
Note	10	14	9	12	8

He would like to draw up a Cartesian graph using the reference frame below:



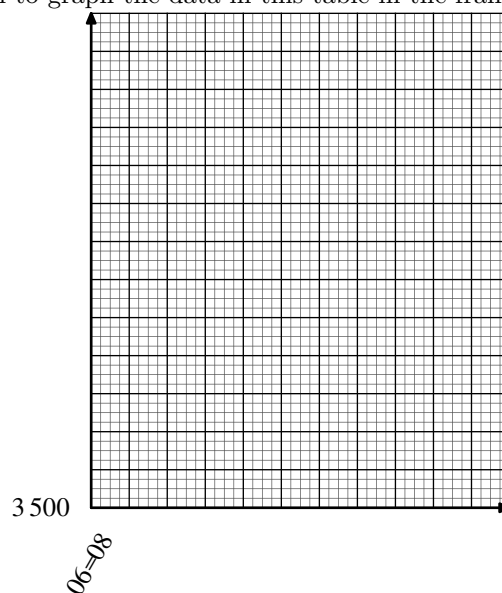
To do this, use:

- the x-axis to represent all days from 27 November to 6 December.
- the y-axis should represent all values from 0 to 16.

E.2273 The value of the CAC40 stock market index on the Paris stock exchange is recorded every first of the month. Here is the reading for the last 6 months:

Date	Juin 08	Juillet 08	Août 08	Sept. 08	Oct. 08	Nov. 08
Valeur	4750	6500	5000	4250	3500	3750

We wish to graph the data in this table in the frame below:



To do this:

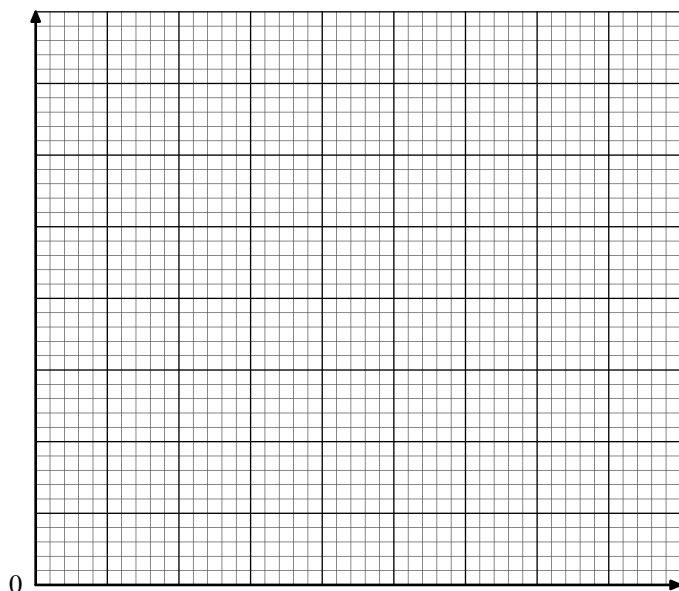
- We start the ordinate scale from the value 3 500 and adapt the scale to make maximum use of this axis.
- The x-axis starts at 06/08 and should represent all months up to November 2008.

E.3900    The size of a child over the ages was noted :

Age	0 years	2 years	4 ans	8 ans	12 ans	14 ans	16 ans
Taille (en cm)	40	60	90	120	130	140	160

Construct the Cartesian graph associated with this table in the reference frame below, observing the scale :

- On the x-axis: 1 cm represents 2 years;
- On the y-axis: 1 cm represents 20 cm.



E.3869    A maths teacher gives one test a month to his sixth-form class. In the table below, he plots the number of pupils who obtained the average at each test :

Month	Sept.	Oct.	Nov.	Déc.	Jan.	Fév.	Mars	Mai	Juin
Nombre d'élèves	18	14	16	10	8	12	14	16	14

Draw the Cartesian graph associated with this table using the following scale :

- On the x-axis: 1 cm represents 1 months;
- On the y-axis: 1 cm represents 2 points.

E.3740    A chemist observes the temperature of one of his experiments for 6 h ; here is the summary table

of his observations :

Temps d'observation (en h)	0	1	2	3	4	5	6
Température (en °C)	17	12	10	11	13.5	15	17

Draw the Cartesian graph representing these data using the following scales :

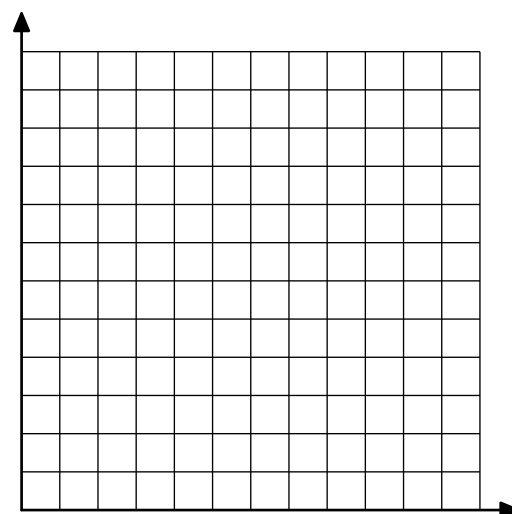
- on the x-axis: 1 h = 2 cm ;
- on the y-axis: 1° C = 1 cm

E.2223    Here are the temperatures recorded in Montpellier on a particular day in October

Heure	0	2	4	6	8	10
Température (en °C)	17	15	14	16	17	18

Heure	12	14	16	18	20	22
Température (en °C)	20	21	23	22	20	18

- What temperature was recorded at 6 h? at 18 h?
- At what times was a temperature of 20°C recorded?
- Represent the data provided by the table below in a Cartesian graph :



where :

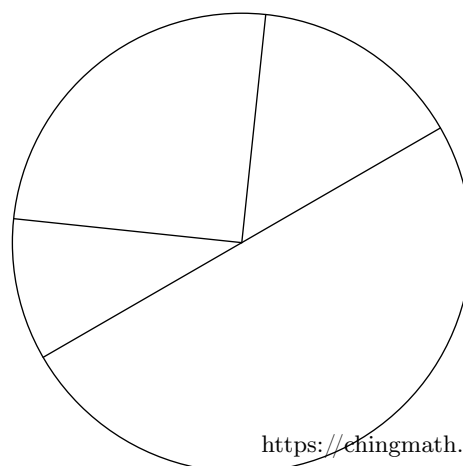
- the x-axis must represent all values from 0 h to 24 h.
- the y-axis must represent all values from 0° to 24°.

9. Circular diagrams: reading

E.2224    All sixth form classes met to elect their representatives to the school council. Four students were candidates, and here are the results :

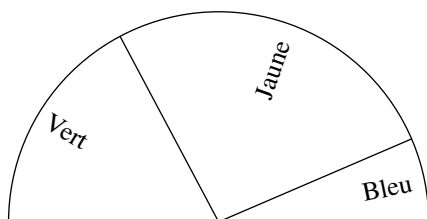
Candidat	Luc	Andréa	Lucie	Alphonse
Nombre de voix	15 %	50 %	25 %	10 %

Here is the pie chart representation of this table, but all indications have been removed.



Complete the pie chart with the information in table (*name and percentage of vote obtained*).

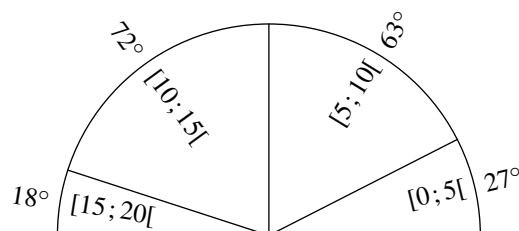
E.5638 🌡️ 🍷 📅 In a survey, participants were asked to choose their favorite color from blue, green, and yellow. These results were translated into the semi-circular diagram below:



Is there a color that won more than 50 % of the votes?

E.5637 🌡️ 🍷 📅 The semicircular diagram below shows the first quarter averages in mathematics of fifth

graders at a middle school. The students were sorted into five classes.



Next to each class, the measurement in degrees of the angular sector representing it is indicated.

- 1 Determine the percentage frequency of students who had between 10 inclusive and 15 excluded from the average.
- 2 Knowing that this school has 127 fifth graders, determine the number of students who had an average between 10 included and 15 excluded.

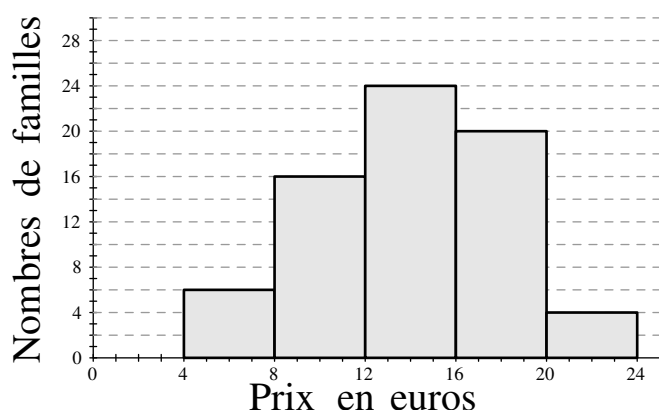
10. Pie charts: constructions

E.913 🌡️ 🍷 📅 Here are the results of a survey carried out in a class of ninth graders on the means of transport they use to get to school.

	Voiture	Bus	A foot	Booster	Total
Fréquence	45 %	25 %	20 %		
Angle					

- 1 Copy and complete the following table
- 2 Construct a 3 cm-radius pie chart representing this statistical series.

E.1462 🌡️ 🍷 📅 A crèche welcomes 70 children. The prices paid by families for a day at crèche vary between 4 euros and 24 euros depending on income. The histogram of prices paid by families is shown below :



We'll give the default approximate value to unity for angle and frequency measurements.

- 1 Copy and complete the statistical table below :

Prix d'une journée (en euro)	[4;8[	[8;12[	[12;16[	[16;20[	[20;24[
Effectifs					
Fréquences en pourcentage					
Angles					

Percentage frequencies are rounded to the nearest tenth and angles to the nearest degree.

- 2 Construct the pie chart corresponding to the headcount table.

11. Average of a statistical series

E.4674 🌡️ 🍷 📅 The table below shows the number of rainy days per year :

Année	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Nombres de jours de pluie	57	81	77	77	82	86	90	98	97	76

Determine over these 10 years, the average number of rainy days per year.

E.5477    People are asked 10 about the number of times they have been to a museum in the past month. Here are their responses:

2 ; 0 ; 4 ; 1 ; 0 ; 2 ; 3 ; 2 ; 1 ; 2

- ① Give the percentage frequency of “people who have made two visits to a museum in the past month”.
- ② Determine the average number of times this group visited a museum in the past month.

E.1991    The table below shows the number of people, in thousands, in each of the CEMAC countries in 2005:

Cameroun	Centrafrique	Congo	Gabon	G. équat.	Tchad
16 322	4 038	3 999	1 384	650	9 749

(according to the *Cameroonian Institute of Statistics*)

- ① What is the total population of CEMAC?
- ② Give the percentage, to the nearest tenth, of each country's population relative to the whole of CEMAC.
- ③ Calculate the average population per country.

E.4660   

- ① The tables below represent the average maximum temperatures in 2008 for each month in Lomé:

Mois	Janvier	Février	Mars	Avril	Mai	Juin
Température (en °C)	32.5	33.8	33.1	33.8	32.9	30.5

Mois	Juillet	Août	Sept.	Oct.	Nov.	Dec.
Température (en °C)	29.6	29.1	29.0	31.9	33.4	33.0

Determine, to the nearest tenth of a degree, the average maximum in Lomé in 2008.

- ② The tables below represent the average minimum temperatures in 2008 for each month in Lomé:

Mois	Janvier	Février	Mars	Avril	Mai	Juin
Température (en °C)	21.4	25.3	26.2	25.7	24.7	23.9

Mois	Juillet	Août	Sept.	Oct.	Nov.	Dec.
Température (en °C)	24.4	23.9	24.1	24.7	25.5	25.2

Which month has the most amplitude between the average high and average low in 2008?

E.3764     At a rental store, the manager counted the number of *DVD* rented during a week and obtained the results shown in the following table:

	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
Number of <i>DVD</i> rented	19	15	16	14	20	74	52

- ① What is the total number of *DVD* rented over the entire week?
- ② Calculate the average number of *DVD* rented per day during this week.
- ③ Calculate the percentage of *DVD* rented during the weekend (*Saturday and Sunday*) compared to the entire week.

12. Unclassified exercises

E.1432   A statistician has classified a city's population according to their blood groups. He also calculated the angles needed to represent each of these groups in a pie chart:

Blood types	O	A	B	AB
Effectifs	2380	1921	1394	
Angles représentés	140	113	82	

Unfortunately, the data corresponding to individuals with blood group *AB* has been lost.

- ① Explain how to obtain the missing data. Then complete the table.
- ② Make the associated pie chart.