UNIVERSITÉ HENRI POINCARÉ NANCY 1

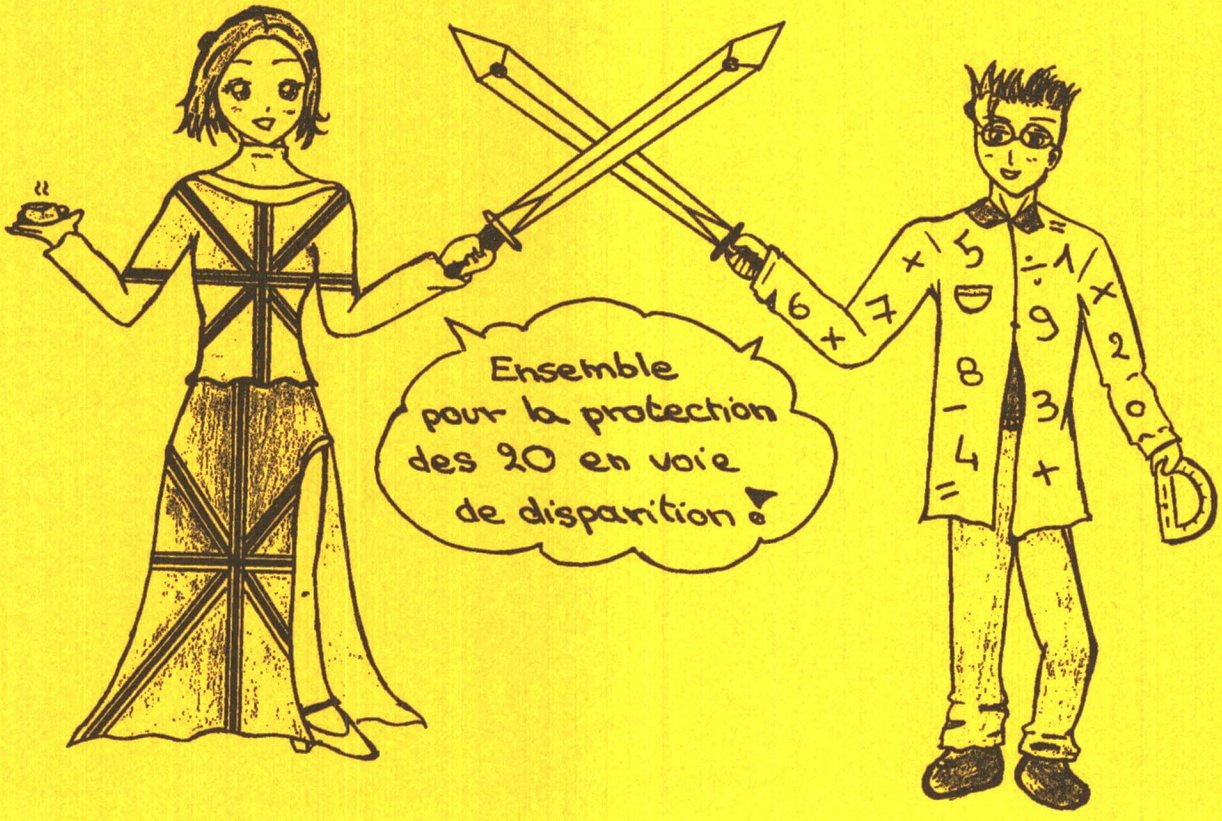
I.R.E.M. DE LORRAINE

LE DUO

MATHS-ANGLAIS

TRAVAUX CROISÉS

L e



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Avant propos

Ce document est constitué de 35 fiches ludiques d'exercices à contenu mathématique dans lesquelles les consignes sont rédigées en anglais. Les 23 premières fiches ont été élaborées dans le cadre d'un parcours diversifié en 5ème par une équipe de trois professeurs (maths et anglais),et les 12 suivantes ont été réalisées dans le cadre de travaux en 4ème avec cette fois la participation de deux classes (4ème4 et 4ème 5, collège Chopin, année 2000-01)qui ont mené à bien la réalisation de celles - ci.

Chacune de ces fiches contient une série d'exercices à effectuer pour trouver la solution d'une énigme ou d'une devinette.

C'est une façon motivante de faire des maths tout en se familiarisant avec le vocabulaire spécifique correspondant en anglais .

Ces fiches peuvent être utilisées en classe entière de la manière suivante :

a) distribution et présentation de la fiche pendant le cours d'anglais,

b) travail individuel à la maison avec traces sur le cahier,

c) correction des exercices mathématiques pendant le cours de maths,

d) synthèse sur la réponse obtenue en anglais pendant le cours d'anglais.

What is black when it is clean and white when it is dirty ?

Calculate the following expressions (without a calculator). Find your answer and notice the letter next to it. Write this letter in each box containing the number of that exercise.

①	$5 + 5 \times 7$	⑤	$15 - 5 - 2 + 7$
②	$12 \times (12 - 7)$	⑥	$14 : 7 + 7$
③	$15 - 5 : 5$	⑦	$20 - (4 + 5 \times 2)$
④	$4 \times 12 - 12 \times 2$	⑧	$24 : 4 \times 2$

Answers

W	1	T	2	S	3	R	6
E	8	D	9	B	12	Y	13
O	14	L	15	H	17	C	24
K	40	N	50	A	60	I	70

2	8	5	2	4	1	8	3	2	7	6

What Game Do Cannibals Play at Parties ?

Calculate the following expressions (without a calculator). Find your answer and notice the letter next to it. Write this letter in each box containing the number of that exercise.

① $10 + 8 \times (6 - 4) \times 2$

② $(10 + 8) \times 6 - 4 \times 2$

③ $10 + (8 \times 6 - 4) \times 2$

④ $2 \times 5{,}5 + \dfrac{4 \times 20 - 20}{4}$

⑤ $\dfrac{28}{1{,}4 \times 5 + 7}$

⑥ $26 - 3 \times 6 - 5 + 3$

⑦ $35 - [18 - 12 \times (0{,}8 - 0{,}3)]$

⑧ $8 - 2 \times (12 - 9) + (38 : 2 + 9 - 3 \times 2)$

⑨ $35 - 3 \times 2 \times (9 - 3{,}5) + 5 \times 6 - 3$

⑩ $61 - [18 : 3 + 4 + 5 \times (8 - 3)]$

Answers

M	72	A	100	N	10	C	32
E	2	V	11	L	26	S	6
H	42	O	26	D	24	P	0
R	98	U	107	W	29	T	23

6	9	2	10	10	4	9	7	1	5	10	5	2	8	5	3

Why are small balloons cheaper than large balloons ?

Transform each expression and find the corresponding one in the answers below ; notice the letter next to it and write this letter in each box containing the number of that exercise.

①	13(31 + 3)
②	(31 - 13) × 3
③	13 × 31 - 3 × 31
④	31 - (3 + 13)
⑤	31 × 3 + 13
⑥	3(31 × 13)

❶	2a + 6a
❷	3a + 3b
❸	6b - 3b
❹	6(a + 2)
❺	6a - 6b
❻	3a + 3

Answers :

E	31 × (3 + 13)
A	106
O	31 × (13 - 3)
R	31 × 13 + 3 × 13
T	13 × 28 × 31
H	(3 × 31) × 13
M	31 - 13 + 3
C	31 - 13 × 3
N	3 × 31 - 13 × 3
V	(3 ×31) × (3 ×13)
S	31 - 3 - 13

F	3b
K	12a
L	3(a + 1)
D	2b
T	6a + 12
B	3(a + b)
U	6a + 2
I	8a
P	0
E	6(a - b)
W	6a

❹	⑥	❺	①	❺	④	❷	❺	❺	②	❻	❺	④	④	❶	②	❸	❻	⑤	❹	❶	③	②

What is a minimum ?

Calculate each expression where **x** has a value of **1,5**, **a** has a value of **0,4** and **b** has a value of **3,6**.
Cross out the box that contains your answer. When you finish, print the letters from remaining boxes in the squares at bottom of the page.

(1) $6x + 2$

(2) $\frac{4x+1}{4}$

(3) $5 + \frac{x}{3}$

(4) $(x/2)/3$

(5) $\frac{9}{x+3}$

(6) $10\,ab$

(7) $9\,b - 6\,a$

(8) $a^2 + 3\,b$

(9) $27/(b/a)$

(10) $\frac{2b}{a+b}$

(11) $\frac{2ab}{b-a}$

(12) $b^2 + 3\,a\,b$

Remember : x = 1,5

a = 0,4

b = 3,6

AV 2,5	**CH** 1,75	**AT** 11	**ER** 9	**AD** 5,5	**YS** 21,6	**AP** 30	**AI** 2	**RE** 17,28	**MA** 6,25
LG 0,9	**LL** 11,6	**MO** 0,4	**AT** 10,96	**RY** 0,25	**BI** 3	**TH** 9,6	**OR** 14,4	**TE** 1,8	**ER** 18,75

What animal is black, white and green ?

Transform each expression, find the corresponding one in the answers below and notice the letter next to it. Write this letter in each box containing the number of that exercise.

①	$a + a$	④	$2 \times 3a$	⑦	$5 - 5a$
②	$a \times a$	⑤	$3a - 3b$	⑧	$3(2a - 3)$
③	$2a - a$	⑥	$3a \times 3b$	⑨	$15 + 5a$

Answers

A	a	D	6ab	K	6a - 9	S	2a
B	9ab	E	5(1 – a)	L	0a	W	20a
C	a^2	I	3(a – b)	R	5(3 + a)	Z	6a

3	1	7	3	1	5	2	8	4	7	6	9	3

WHY DO WHITE SHEEP EAT MORE GRASS THAN BLACK SHEEP ?

Calculate each expression where x has a value of 0,7, a has a value of 0,3 and b has a value of 6,3. Cross out the box that contains your answer. When you finish, print the letters from the remaining boxes in the squares at the bottom of the page.

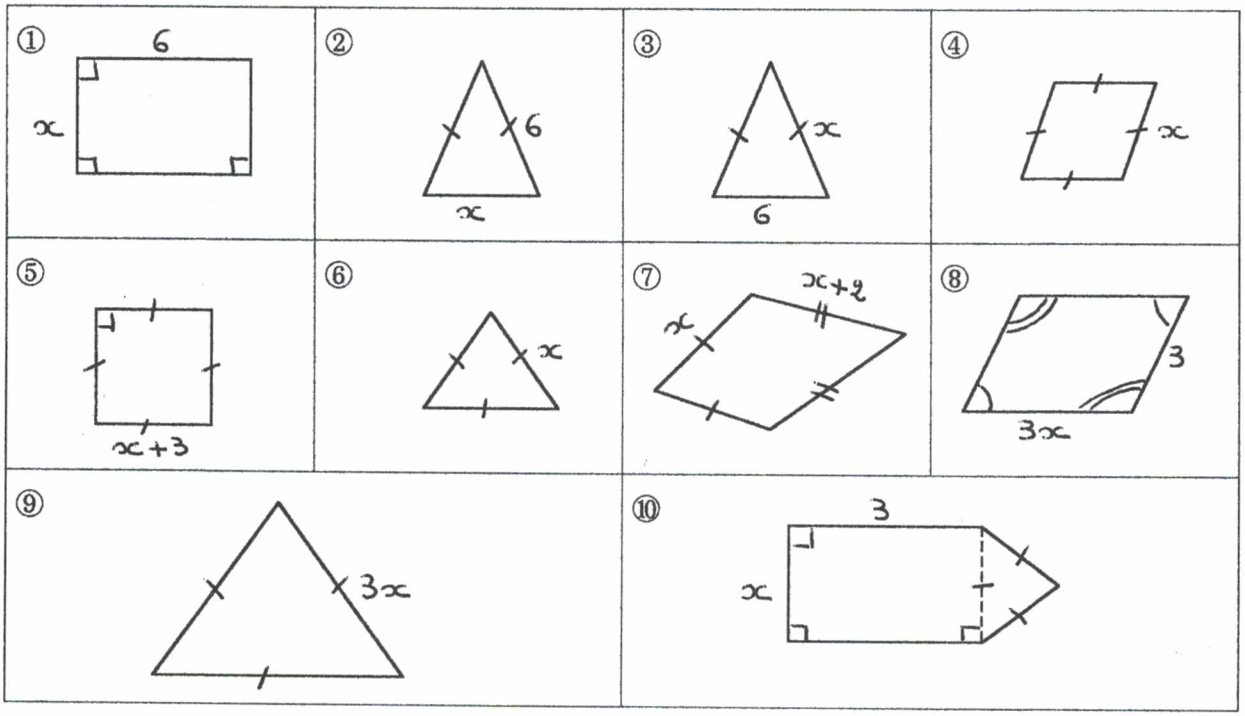
1	$15 - 5x$	4	$\frac{b}{a} - 10x$	7	$\frac{a+b}{a+a}$
2	$bx - ax$	5	$ab + bx$	8	$\frac{b}{b+x}$
3	$a\frac{b}{x}$	6	b/a^2	9	$bx + x^2$

Remember : $x = 0,7$; $a = 0,3$; $b = 6,3$ and don't forget to factorise : $bx - ax$ ....

AWH	TH	IT	ER	ES	EA	HE	RE	MO	EP
4,2	7	0,9	21	2,7	20,3	11,5	11,11	0	70
IS	RE	WH	BI	IT	GG	ES	HE	ER	EP
6,3	9	0,7	11	61,11	14	42	10,5	4,9	5,81

▲ What goes up and down but doesn't move ? ▼

Find the perimeter of each figure in the answers below and notice the letter next to it.
Write this letter in the box containing the number of that exercise.



Answers

H	$2x$	V	$6 + x$	A	$3x$	E	$12 + x$
C	$4x$	R	$2x + 6$	O	$5x$	A	$2x + 12$
W	$6x$	S	$3x + 6$	N	$7x$	T	$4x + 12$
U	$8x$	S	$6x + 4$	A	$9x$	I	$6x + 6$

1	7	5	9	8	3	4	6	10	2

What Do You Call an Insect That Plays Drums ?

First cancel down each fraction below as much as possible; then find an equivalent fraction in the boxes at the bottom of the page.

Rule : We get an equivalent fraction by dividing or multiplying both top and bottom by the same number.

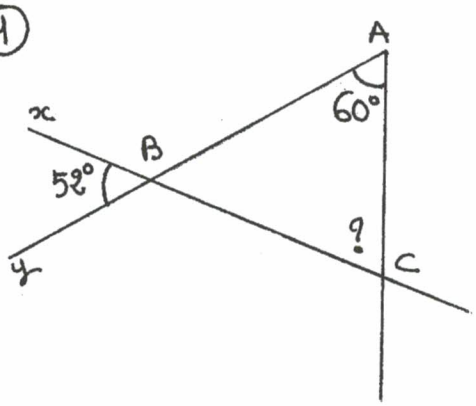
Example : $\frac{1,8}{3} = \frac{18}{30} = \frac{3}{5} = \frac{12}{20}$

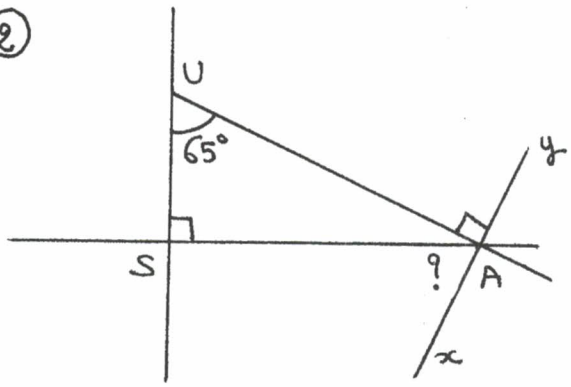
T	$\frac{35}{40}$	C	$\frac{54}{36}$		
C	$\frac{30}{75}$	I	$\frac{0,2}{7}$		
I	$\frac{12}{27}$	Y	$\frac{63}{3,6}$	T	$\frac{52}{39}$
H	$\frac{140}{220}$	K	$\frac{260}{480}$	H	$\frac{13}{0,5}$
A	$\frac{1,5}{12}$	M	$\frac{2,5}{3}$	R	$\frac{0,4}{1,25}$

$\frac{1}{8}$	$\frac{5}{3}$	$\frac{32}{100}$	$\frac{104}{4}$	$\frac{35}{2}$	$\frac{4}{3}$	$\frac{0,7}{1,1}$	$\frac{45}{54}$	$\frac{3}{105}$	$\frac{4}{10}$	$\frac{14}{50}$	$\frac{7}{8}$	$\frac{4,4}{9,9}$	$\frac{4,5}{3}$	$\frac{1,3}{2,4}$

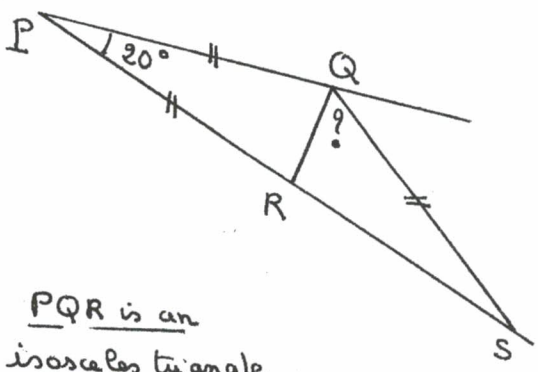
What Happens When the Smog Lifts in Los Angeles, California ?

Calculate the missing angle in each of the following triangles and find your answer at the bottom of the page.
When you finish, the answer to the title question will remain.

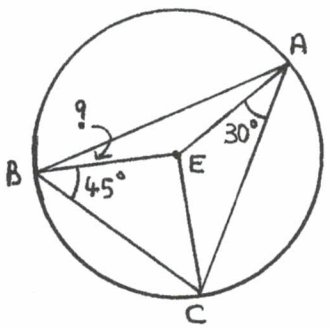
① 

② 

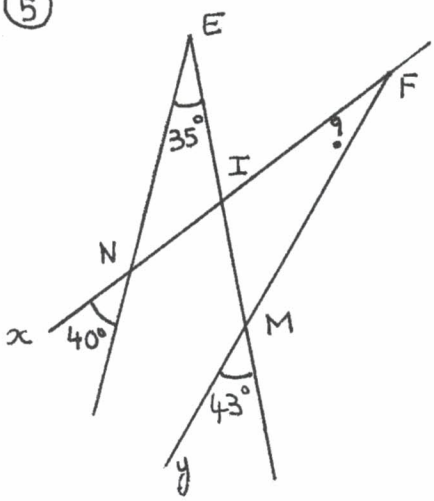
USA is a right-angled triangle

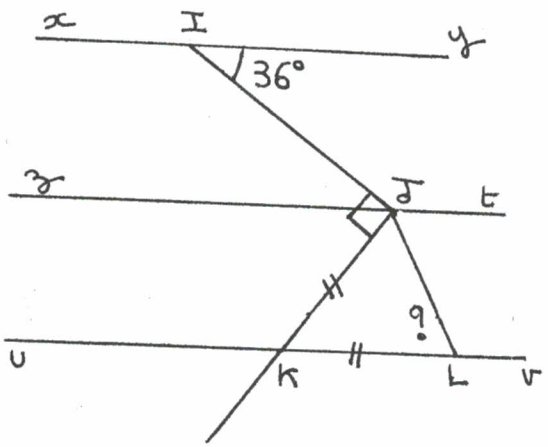
③ 

PQR is an isosceles triangle

④ 

E is the centre of the circle

⑤ 

⑥ 

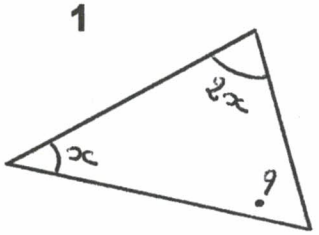
(xy), (zt) and (uv) are parallel lines

65°	63°	35°	15°	25°	32°	10°	68°	23°	60°
A	B	U	S	C	O	L	R	A	Y

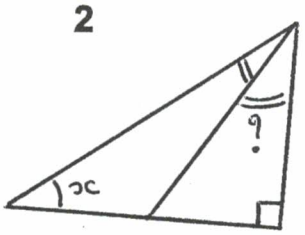
Why does a poor man drink coffee ?

Calculate the missing angle marked by **?** in each of the following figures.
Find your answer and notice the letter next to it. Write this letter in each box containing the number of that exercise.

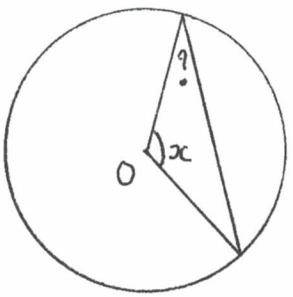
1



2



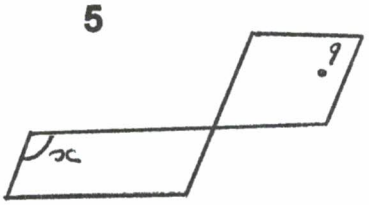
3



O is the centre of the circle.

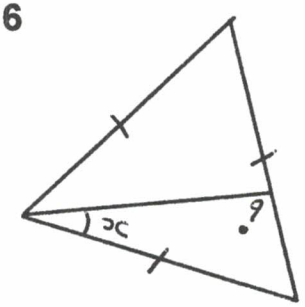
4

5

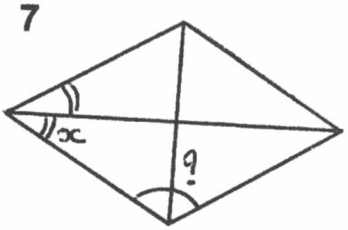


These figures are parallelograms.

6

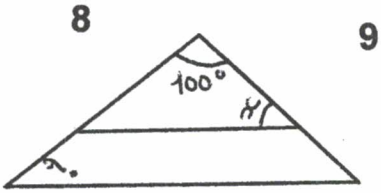


7

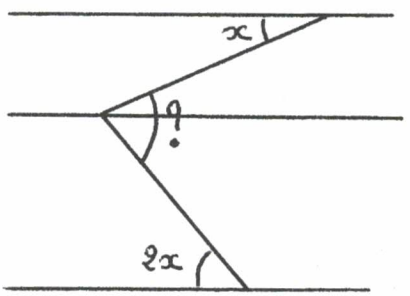


A rhombus.

8



9



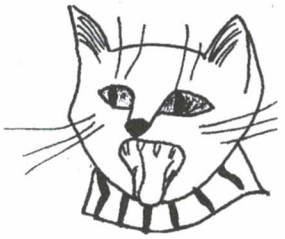
The lines are parallel.

$90-x$	F
$135-x$	A
x	D
$180-2x$	T
$120-x$	H
$100+x$	G
$90+x$	U
$180-x$	N
$60+x$	L
$80-x$	E
$3x$	P
$80+x$	B
$\frac{180-x}{2}$	S
$\frac{90-x}{2}$	O
$90+2x$	C
$45-x$	M
$180-3x$	R

6	8	6	4	3	5	2	9	1	2	9	8	1	7	8	4

The French say :

"Avoir un chat dans la gorge"

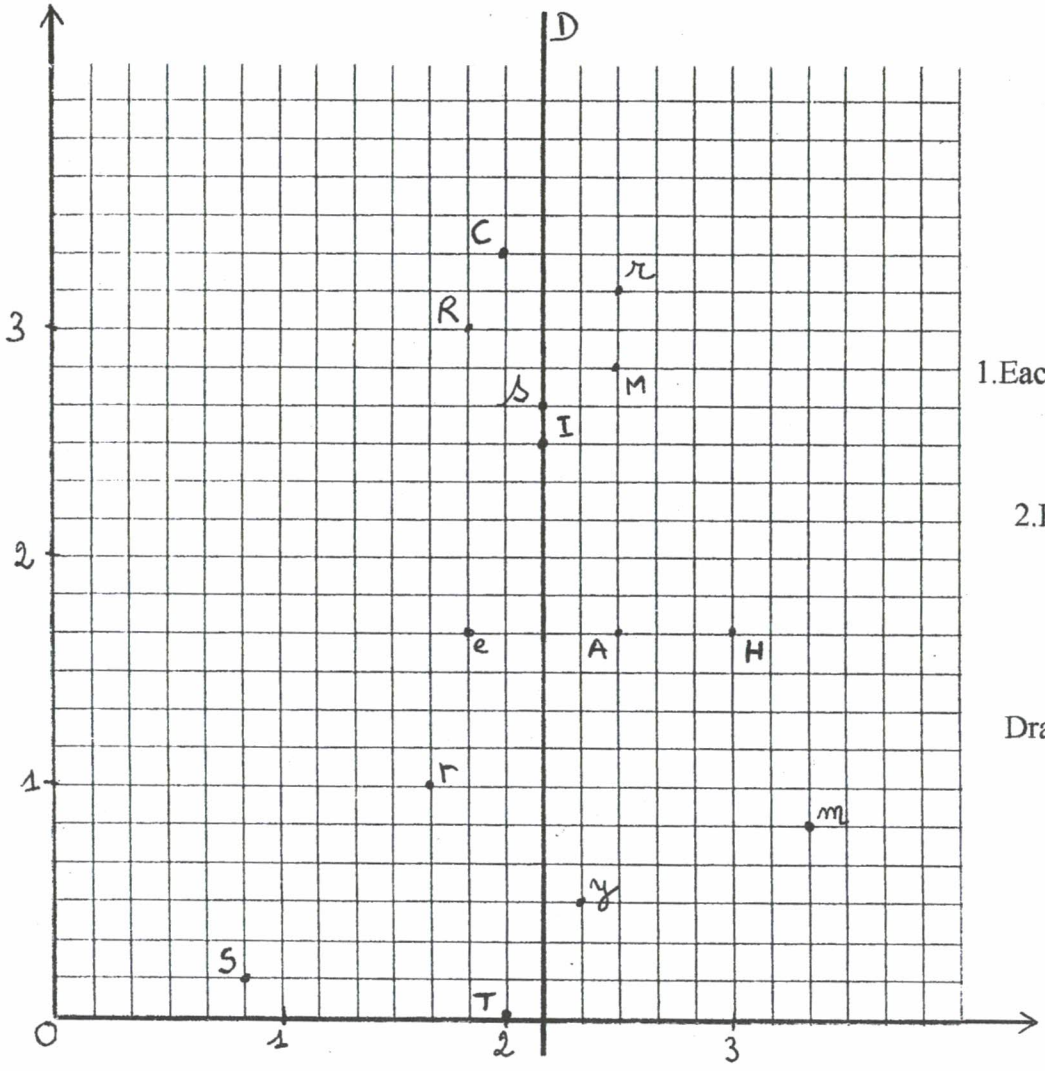


What do the English say ?

Calculate each expression then simplify the fraction if possible.
To the numerator (the top number) corresponds a letter in the alphabet : 1→ A, 2→B, ...
Write this letter in each box containing the number of that exercise.

1	$\frac{4+16}{4+29}$
2	$\frac{4}{5}+\frac{1}{25}$
3	$\frac{2}{5}-\frac{1}{25}$
4	$\frac{9{,}5}{3}-\frac{5}{6}$
5	$2\times\left(1+\frac{2}{9}\right)$
6	$\frac{32\times33}{44\times15}$
7	$\frac{2}{3}-\frac{1}{3}\times\frac{1}{3}$
8	$\frac{63}{65}\times\frac{26}{49}$
9	$3+\frac{1}{2}\times\left(1+\frac{1}{2}\right)$
10	$2\times\left[1-\frac{1}{3}\times\left(1-\frac{1}{3}\right)\right]$
11	$\frac{3}{15}+\frac{13}{15}\left(1-\frac{1}{13}\right)$
12	$\frac{7+5\times7}{7+4\times7}$
13	$\frac{5}{4}+\frac{5}{6}$

1	9	6	11	5	7	11	12	8	9	4	3	10	13	9	2	8	1	6	8	9	11	1



1.Each ordered pair at the bottom of the page represents a point on the coordinates.
Above each ordered pair, write the letter that appears at that point.

2.Place the symmetrical points I', H' … of the points I, H, A, m, y, S, r, e, T
on the other side of the dividing line « D ».

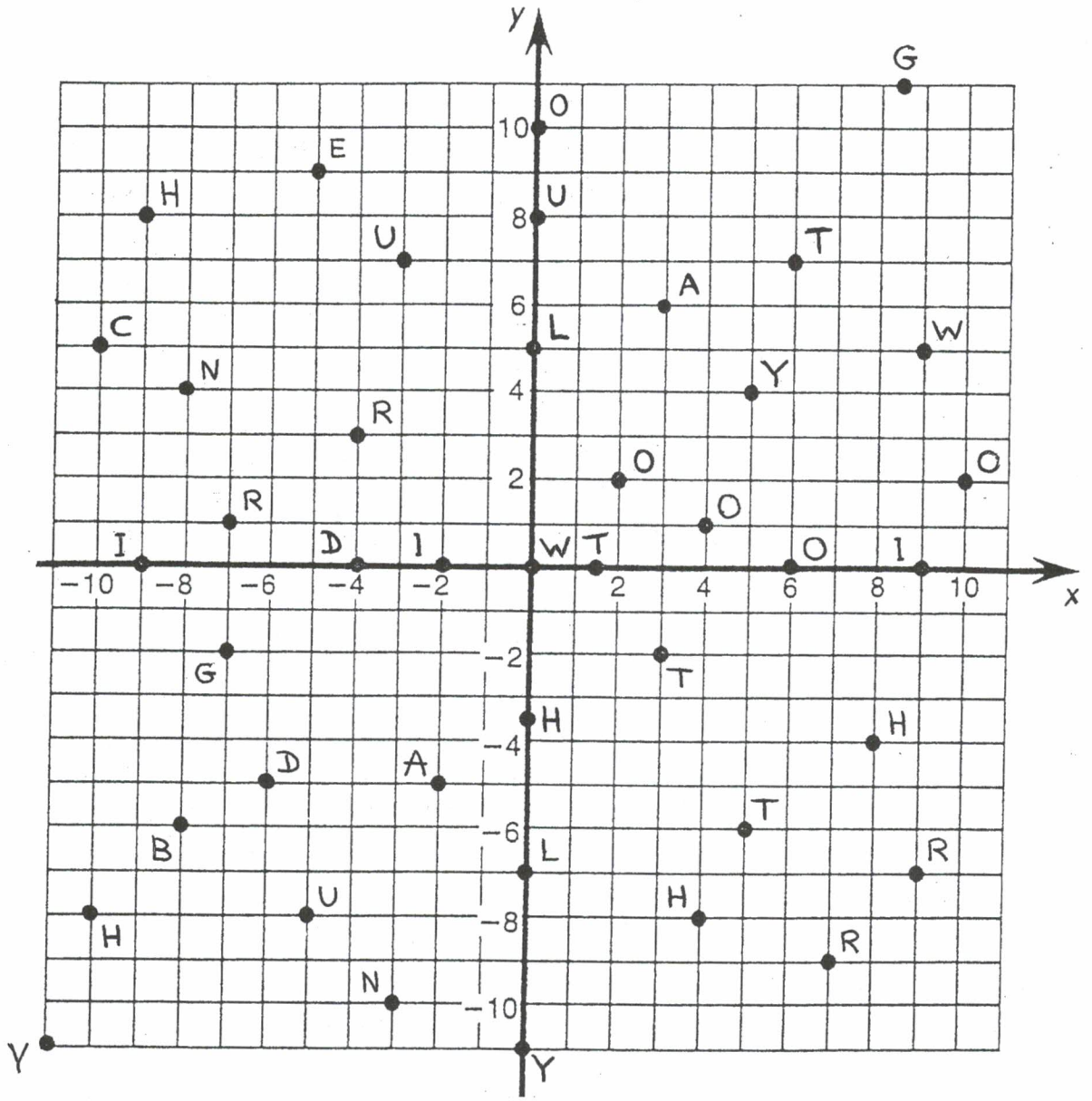
3. Draw the line joining the points I, H', e, m', r, S, y', T, in green.
Draw the symmetric line in blue (on the other side of the dividing line « D »).

4.Draw the line joining the points , , R, M, C, , in yellow.

		$\left(\frac{10}{3};\frac{5}{6}\right)$	$\left(\frac{11}{6};\frac{5}{3}\right)$	$\left(\frac{5}{3};1\right)$	$\left(\frac{5}{2};\frac{19}{6}\right)$	$\left(\frac{7}{3};\frac{1}{2}\right)$		
$\left(2;\frac{10}{3}\right)$	$\left(3;\frac{5}{3}\right)$	$\left(\frac{11}{6};3\right)$	$\left(\frac{13}{6};2{,}5\right)$	$\left(\frac{5}{6};\frac{1}{6}\right)$	(2;0)	$\left(\frac{5}{2};\frac{17}{6}\right)$	$\left(\frac{5}{2};\frac{5}{3}\right)$	$\left(\frac{13}{6};\frac{8}{3}\right)$

What can you hold in your left hand but not in your right hand ?

To each pair of numbers at the bottom of the page corresponds a point on the graph below. Above each pair, write the letter that appears at that point.



(5 , 4)	(10 , 2)	(-3 , 7)	(-10 , 5)	(-2 , -5)	(-3 , -10)	(3 , -2)	(8 , -4)	(6 , 0)	(0 , 5)
(-4 , 0)	(0 , -11)	(2 , 2)	(-5 , -8)	(-7 , 1)	(7 , -9)	(-9, 0)	(-7, -2)	(4 , -8)	(6 , 7)
(-5 , 9)	(0 , -7)	(-8 , -6)	(0 , 10)	(0 , 0)	(9 , 5)	(9 , 0)	(5 , - 6)	(-9 , 8)	(-11 , -11)
(4 , 1)	(0 , 8)	(-4 , 3)	(9 , -7)	(-2 , 0)	(8.5 , 11)	(0 , -3.5)	(1.5 , 0)	(-10, -8)	(3, 6)
(-8, 4)	(-6, -5)								

The French say : " Jeter l'argent par les fenêtres."

What do the English say ?

Calculate the following expressions (without a calculator). Find your answer to each exercise and notice the two letters next to it.
Write these letters in the two boxes at the bottom of the page that contain the number of that exercise.

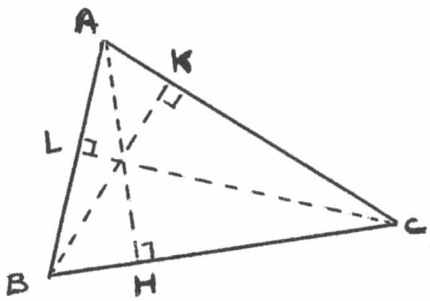
Remember : $k(a + b) = ka + kb$ *and* ***don't forget to*** **simplify.**

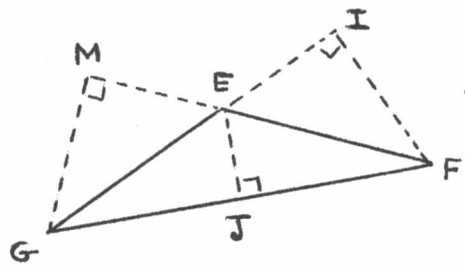
1	$19+\frac{2}{3}\times 9-9$	7	$\frac{13}{6}-2\times\frac{13}{12}+3\times 6$
2	$13\times\frac{6}{26}+10\times 4-3$	8	$\left(50\times\frac{3}{5}-6\right)\times\frac{7}{10}$
3	$14+6\times\frac{1}{4}+2\times 6$	9	$27-\frac{12}{9}\times 2+\frac{8}{3}-15\times\frac{1}{5}$
4	$\left(\frac{48}{3}+6\right)\times\frac{5}{2}$	10	$\frac{35}{40}-7\times\frac{1}{8}+5\times\frac{9}{5}$
5	$50+4\left(\frac{1}{2}+11\right)$	11	$10+4\left(5-\frac{1}{4}\right)+\left(\frac{28}{6}-\frac{2}{3}\times 7\right)$
6	$\left(3+\frac{5\times 9}{15}\right)(4\times 5-7)$	12	$\left(\frac{4}{10}+\frac{3}{5}\right)\times 3\times\frac{1}{4}$

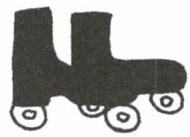
LO	20,8	SF	40	HI	18	TE	168
EL	60	NT	55	SO	34	AT	10,75
HE	96	CH	13	MI	66,5	AV	29
EA	41,6	ST	27,5	LA	17,16	MA	0,35
DS	78	HE	16	OD	0,75	IN	9
EN	594	LS	17	WA	24	OR	16,8

5	5	9	9	4	4	3	3	1	1	12	12	6	6	10	10	7	7	2	2	11	11	8	8

What is big, grey, fast and has16 wheels ?







In the triangles ABC and EFG, the heights are drawn. The following exercises are independent.
Two measures are given in each case and you are asked to calculate a third one.

Cross out the boxes that contain your answers.
When you finish, print the remaining letters in the boxes at the bottom of the page.

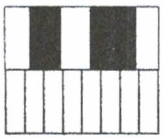
The lengths are in **cm** and the area in **cm²**.

1	BC= 4,7 ; AH= 3,6 ; area ?	**5**	AH= 9,3 ; area= 55,8 ; BC ?
2	AC= 4,2 ; BK= 3,5 ; area ?	**6**	AB= 5,8 ; CL= 2,7 ; area ?
3	MG= 4,1 ; EF= 2,8 ; area ?	**7**	EG= 3,2 ; area= 2,24 ; IF ?
4	GF= 12,5 ; area= 15 ; EJ ?	**8**	EF= 5,6 ; area= 12,6 ; MG ?

ANSWERS:

the	ane	ord	is	le	pha	us	nto
2,4	5,14	7,83	8,46	4,9	6,35	4,5	6,42
nro	pre	een	lle	rska	ave	onn	tes
5,2	7,35	5,74	10,7	11,52	12	1,4	3,16

What do you get if you drop a grand piano down a mine shaft ?



Find the solution of each equation at the bottom of the page and write the letter of that exercise in the box underneath your answer.

M	$x - 7 = 3$	R	$2x + 5 = 33$
L	$2x = 12$	A	$3x - 5 = 16$
N	$x + 9 = 21$	I	$\frac{2x+5}{3} = 9$
O	$x : 2 = 6{,}5$	T	$\frac{2x}{3} - 5 = \frac{1}{3}$
A	$3x = 9$	F	$3x - 2 = 13$

ANSWERS											
3	4	5	6	7	8	9	10	11	12	13	14

How did Mr. Spelling write a four-letter word that begins and ends with " E " ?

Find the solution of each equation in the anwers below and write the letter of that exercise in the box underneath your answer.

E	$3x - 27 = 9$	I	$\frac{60}{x} = 12$
H	$\frac{3}{7} \times \frac{x}{3} = 1$	T	$9x - 39 = 15$
A	$\frac{x}{15} - \frac{1}{15} = \frac{3}{5}$	S	$2x + 30 = 52$
W	$x \times \frac{5}{8} = 2{,}5$	E	$\frac{x+3}{2} - 4 = 2$

ANSWERS

3	4	5	6	7	8	9	10	11	12	13

What happened to the peanut who went walking late at night?

Calculate each expression where **a** has a value of **2,5** ; **b** has a value of **- 5,1** ; **c** has a value of **3,2** ; **d** has a value of **- 6** .
Find your answer in the answer column and notice the letter next to it. Write this letter in each box containing the number of that exercise.

1	a + b - c + d
2	- a - b + c - d
3	3a - 4c + b - 7
4	a - (b - d)
5	3c - (a - b + d)
6	(a - 9) + (c - 5) - (d + 10,2)
7	1 - [a - (b + 2c)]
8	a^2 - 4c - (b - 5)
9	- 5 - [(3 - a) - 6 + d]

ANSWERS

H	-9,5
N	13,2
T	-17,4
D	8
U	-11,8
R	14,3
S	-0,2
I	1,6
A	6,5
w	-12,5
L	3,55
E	11,8

4	**3**	**6**	**9**	**7**	**9**	**7**	**7**	**9**	**1**	**8**	**3**	**2**	**5**

What do you call a hen who eats clay ?

Calculate each expression below, find the expression with the same result in the answer column and notice the letter next to it ; write this letter in the box containing the result.

7 + 3 - 2 × 5	7 +(3 + 2) : 5	-7 + 3 ×2 + 5
7 × 3 : (2 + 5)	7 ×(3 + 2) : 5	7 - (3 + 2) : 5
(7 + 3) : (2 × 5)	7 × (3 - 2) - 5	[-(-7 + 3 × 2)] × 5

Answers :

7 + 3 : 2 × 5	D	7 + 3 × 2 - 5	A	7 - (3 - 2)× 5	R
(7 - 3)× 2 + 5	W	(7 + 3)× 2 : 5	L	7 × 3 - 2 × 5	T
7 × (3 + 2 - 5)	B	7 + 3 × 2 : 5	H	(7 - 3)× 2 - 5	Y
7 - 3 × 2 × 5	S	7 - 3 × 2 - 5	O	7 - 3 - (2 - 5)	K
7 - 3 × 2 + 5	I	7 - 3 - 2 × 5	G	7 - 3 - 2 - 5	N
(7 - 3 - 2) × 5	F	(7 - 3 × 2)× 5	E	7 - 3 + (2 - 5)	C

8	0	2	6	1	7	4	8	3	5	2

The French say : "*Appeler un chat un chat*"
What do the English say?

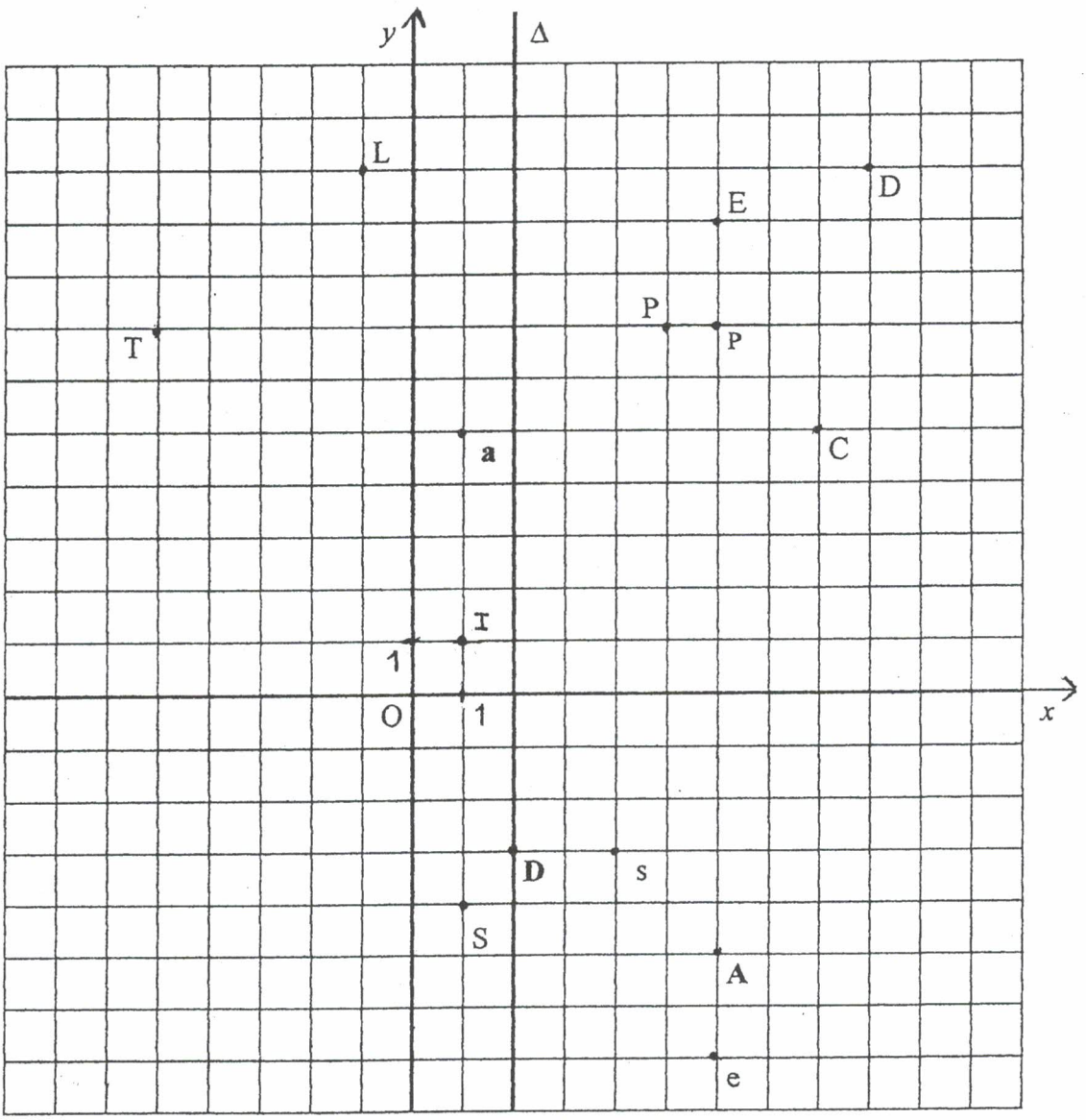
- Each ordered pair at the bottom of the page represents a point on the coordinates. Above each ordered pair, write the letter that appears at the point, or place the point.

- 1) Place the symmetrical points, L',... of the points in capital letter : L,... on the other side of the dividing line Δ.

  2) Place the symmetrical points, e',... of the points in small letters : e, ... on the other side of the point I.

- Draw the line joining the points : D' a' T C' A' p' **A' S D'** ***A*** **a' A'** O s' P' **L'** L E' e' D'.

- Draw the symmetrical line on the other side of the dividing line Δ.

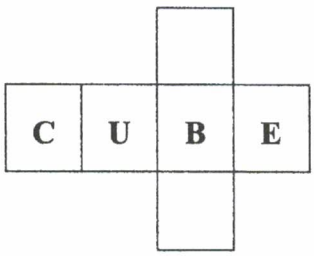


	O				L
(-5 ; 7)	(0; 0)	(8 ; 5)	(1 ; 5)	(-1; 10)	(5,5 ;8,5)

			A			a			*A*		
(6 ; -5)	(1 ; -4)	(6 ; 7)	(10 ; 0)	(9 ; 10)	(6 ; -7)	(6,5;-6,5)	(4 ; -3)	(5 ; 7)	(3 ; -1)	(2 ; -3)	(6 ; 9)

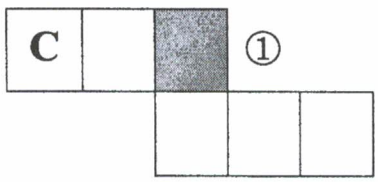
The French say : *" Quand les poules auront des dents "*

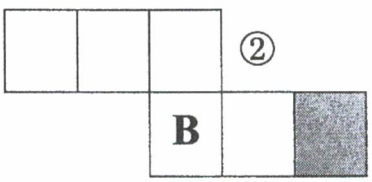
What do the English say ?

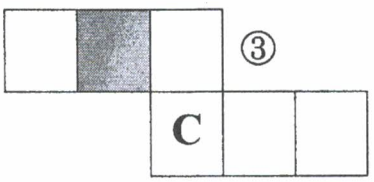


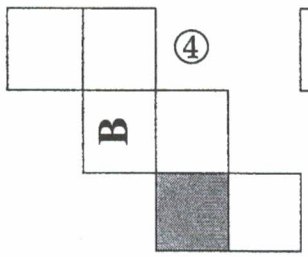
You have here the net of a cube with the letters : **C U B E**

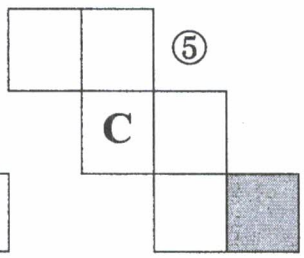
In each net below, write the letters **C U B E** in the right position. Notice the letter in each grey box and find it in the answers. Write the corresponding letter in the box containing the number of the exercise.

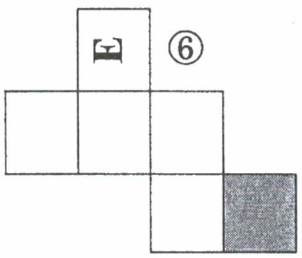


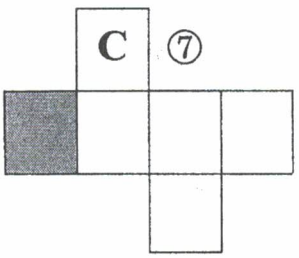


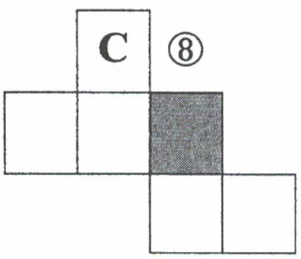


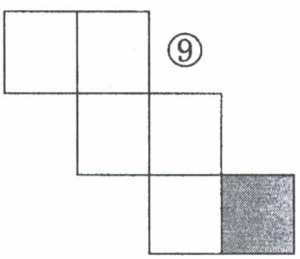


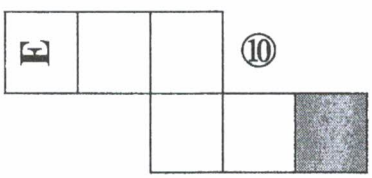












Answers :

B	Я	B	Я	C	Ɔ	Ɔ	Ɔ	E	Ǝ	Ǝ	Ǝ	U	∩	∩	∩
S	W	H	P	I	L	E	G	N	A	M	F	R	Y	T	C

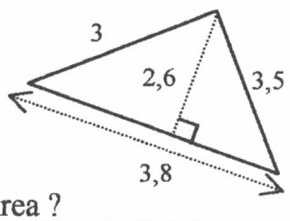
⑤	②	⑩	①	③	②	⑩	⑨	⑧	⑦	⑥	④

The French say : *Il tombe des cordes !*

What do the English say ? …

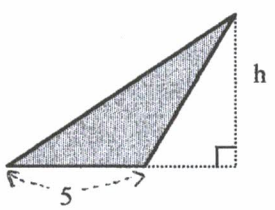
Calculate what is missing in each figure : area, perimeter, height, side…
Find your answer in the answers column and notice the letter next to it.
Write this letter in each box containing the number of that exercise.

1



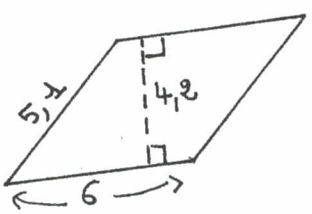
Area ?

2



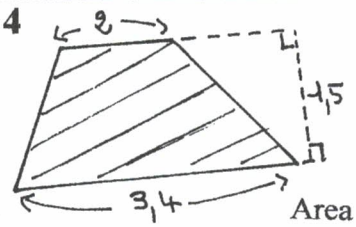
Area : 11,25
Height h ?

3



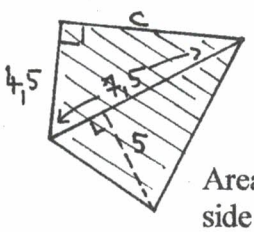
Area ?

4



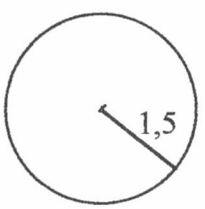
Area ?

5



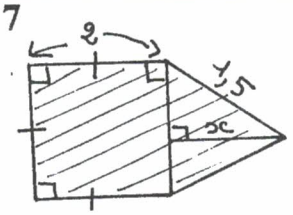
Area : 32,25
side c?

6



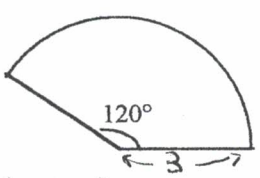
Perimeter ? ($\pi \approx 3,14$)

7



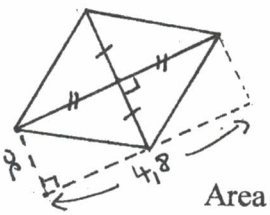
Area : 10,5
x ?

8



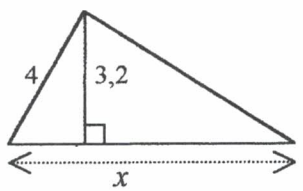
Perimeter ?

9



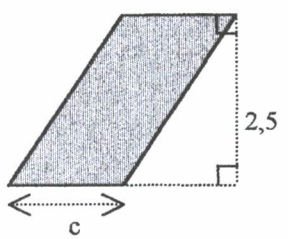
Area : 6,24
x?

10



Area : 8,16 ; x ?

11



Area : 10,5 ; side c ?

ANSWERS

I	4,05	S	1,3
'	5,1	A	25,2
G	4,2	N	9,42
O	12,28	T	4,5
R	6,5	C	6
D	4,94		

4	2	10	9	7	3	4	6	4	6	11	5	3	2	9	3	6	1	1	8	11	9

The French say : *"Voir trente-six chandelles"*

What do the English say ?

Find the solution of each problem below and notice the letter next to it
When you finish, arrange the letters from the letter of the largest answer to the letter of the smallest answer.
Write the letters in this order in the boxes at the bottom of the page.

①	Find the sum of two consecutive whole numbers whose product is 72.	E	⑥	The square of a number is 36. Find the number.	S
②	Find the sum of two consecutive odd whole numbers whose product is 63.	E	⑦	4 times a number decreased by its double is 48. Find the number.	S
③	Find the sum of two consecutive even whole numbers whose product is 48.	T	⑧	Find the smallest multiple of 12 and 15.	T
④	If a number is added to itself twice, the result is 36. Find the number.	A	⑨	Find the largest divisor of 45 and 75.	S
⑤	If a number is added to itself three times, the result is 36. Find the number.	R	⑩	Find the largest divisor of 72 and 108.	O

The English say : *"To skate on thin ice"*

What do the French say ?

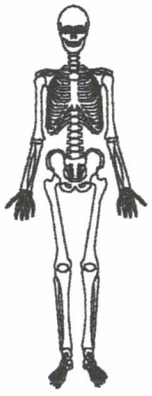
Calculate each expression, find your answer in the list below, notice the letter above it and circle this letter.

The letters you circle give you the answer to the question ; write them in the boxes at the bottom of the page.

-3 - 6,2	-2,5 + 7,8	(-8,4) × (-5)
(-12) × (-8)	17,8 - 7,05	3,5 - 2 × 8
3 × 4,6 - 4,6 × 2	(- 3,5) × 3 - 3,5	- (3,5 + 3) - 3,5
- 8,4 - 8,4	- 7,5 - (-2,05)	4,05 - 2,5 + 4
0 - (-8)	(12 - 20,4) - (19,6 - 12)	2 - [8 - 2 - (-9 + 2)]
(18 - 2,7) + (-3 - 2,7)	-1,8 - [3,6 + (-9 + 6,3)]	7 - 2 × 6,8

ANSWERS :

M	N	A	R	C	O	H	E	T	R
96	12	5,55	-12,5	42	-20	- 2,7	5,3	0	-14
O	S	N	U	T	H	R	I	N	D
6	10,75	-5	-10	-8	34	9,6	10,4	10,3	-16
E	S	I	O	E	U	C	F	S	E
-11	-5,45	-10,3	-16,8	-6,6	-9,2	1	8	4,6	-3



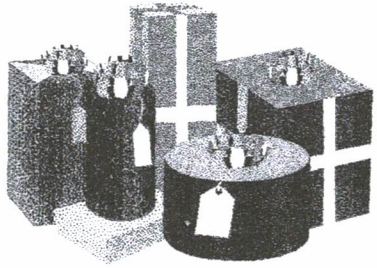
Why did the skeleton not go to the Halloween party ?

Do the following calculations (without a calculator). Find your answer in the answers below and notice the letters next to it .
Write these letters in each box containing the number of that exercise.

	calculations
1	$(-2) \times (-5) + 6 \times (-3)$
2	$(-2) \times 1 \times (-1) \times 1 \times (-1) \times (-1)$
3	$-5 \times 3 - 7 + 9$
4	$-18{,}5 - (-4{,}4) \times 5 + (-11)$
5	$-5 + 8 \times (-3) - 7 \times (-4) + (-9)$
6	$4{,}6 + (-5{,}4) \times (-2{,}7)$
7	$-3 \times 5 - 8 \times (-4) + \frac{18}{3}$
8	$\frac{-6{,}5}{-0{,}1} - 3 \times \frac{3}{4}$
9	$-12{,}5 + 2 \times (2{,}5 : 2) \times (-7)$
10	$\frac{-8}{4} + 26 \times \frac{6}{12}$
11	$10 - (-2) \times (-1{,}5) + (-3{,}5) \times 4$
12	$\frac{-34}{17} + (-42) \times \left(\frac{-8}{7}\right) - 6$
13	$-3 - (-5) \times 4 + 6 : (3 - 2 \times 1{,}5)$

answers							
		TO	-7	EA	15	CA	62,75
		BO	-10	GO	40	BE	2,16
CR	-28	OF	-62	IE	-1	EI	19,18
TH	-8	BE	2	US	-30	TE	16,14
OU	10	RE	110	DY	Imp.	UL	3,5
AD	23	WI	-13	NY	11,66	TH	11
AN	59,5	UE	21	NO	-7,5	EN	-31

2	8	9	6	1	7	4	5	13	11	12	3	10



Merry Christmas
Happy New Year

Do the following exercises and you will get a message .

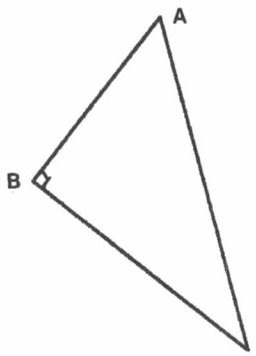
1	$x/4 = 15/30$	**6**	$11/12 = 8/x$	ha	2	eh	8,4	up	0,78
2	$10/3 = x/4$	**7**	$6/x = 5/7$	av	20/23	ay	14/3	er	4,8
3	$23/4 = 5/x$	**8**	$0,7/2,7 = x/3$	ve	40/3	th	-8,72	id	- 32
4	$4/5 = x/6$	**9**	$x/4 = 1:(-1/8)$	be	13,3	yn	21	of	110
5	$x/6 = 7/2$	**10**	$7/9 = x/6$	ol	7/9	ad	0,86	ic	96/11

1	2	3	4	5	6	7	8	9	10

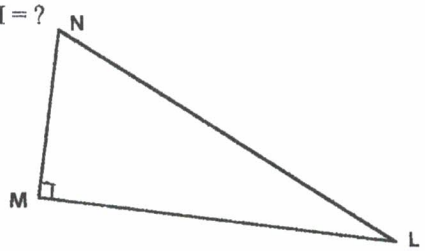
Why do birds fly south in the winter ?

Calculate the missing length or angle in the following figures (with a calculator).
Round off to 10^{-1}. *Find your answers in the answer column. Notice the letters next to them. Write these letters in the boxes at the bottom of the page.*

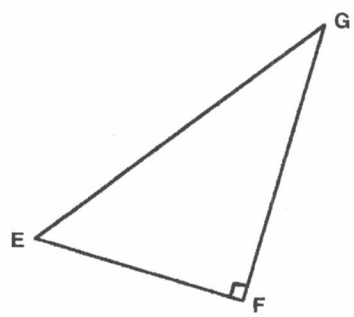
1
AB = 3,4
AC = 6,1
$\widehat{C}$ = ?



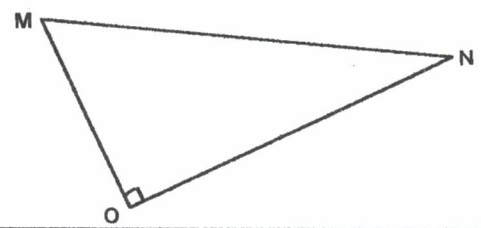
2
ML = 6,2
$\widehat{L}$ = 23°
NM = ?



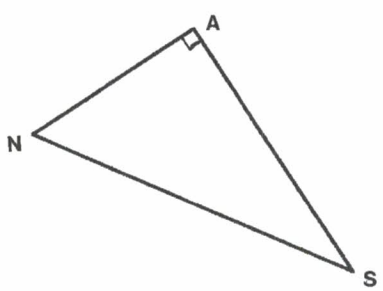
3
EG = 5,3
FG = 4,2
$\widehat{G}$ = ?



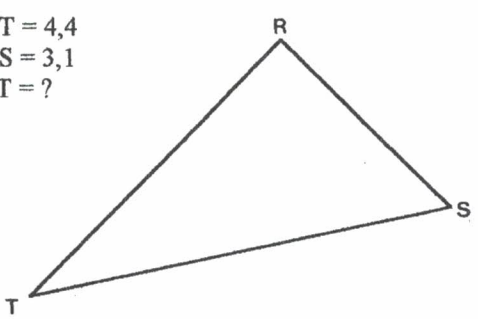
4
MO = 5
$\widehat{M}$ = 35°
MN = ?



5
SN = 5,8
$\widehat{N}$ = 56°
NA = ?



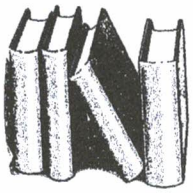
6
RT = 4,4
RS = 3,1
ST = ?



ANSWERS

6,1	OW
5	AU
10,4	OO
33,9	ALK
4,1	EN
3,2	STO
37,6	T
2,5	BEC
2,6	OFAR
42	TOO
5,4	ITI
29,7	SE

6	5	2	3	4	1



Why Are Ancient Stories Like Feet ?

Do the following calculations. (Don't forget to simplifly!).
Find your answer in the answer column and notice the letter(s) next to it. Write the letter(s) in the box at the bottom of the page that contains the number of that exercise.

① $3x = \frac{5}{4}$

② $\frac{-5}{4}x = 3$

③ $\frac{2}{5}t = \frac{-6}{7}$

④ $\frac{6}{5}z = \frac{-1}{4}$

⑤ $\frac{-4}{0{,}25}y = 20$

⑥ $\frac{12}{x} = \frac{5}{2}$

⑦ $\frac{-0{,}5}{x} = \frac{0{,}7}{-3}$

⑧ $\frac{0{,}3}{1{,}2} = \frac{x}{5}$

⑨ $\frac{-10}{3} = \frac{45}{x}$

⑩ $\frac{x}{-3} = \frac{-9}{2}$

ANSWERS

U	$\frac{-50}{4}$	EY	$-\frac{5}{4}$
AR	$\frac{15}{7}$	WA	$\frac{-1{,}5}{1{,}2}$
AG	$\frac{-2}{27}$	R	$\frac{14}{-30}$
EN	$\frac{-12}{5}$	OT	$\frac{24}{5}$
F	$\frac{0{,}7}{1{,}5}$	EG	$\frac{-27}{2}$
S	13,5	ER	$\frac{-24}{5}$
HL	$\frac{-5}{24}$	D	$\frac{5}{4}$
OM	$\frac{12}{5}$	TH	$\frac{-15}{7}$
T	$\frac{2}{27}$	EB	$\frac{5}{12}$
UM	$\frac{-5}{12}$	Y	$\frac{-5}{24}$

3	5	7	1	6	4	9	2	8	10

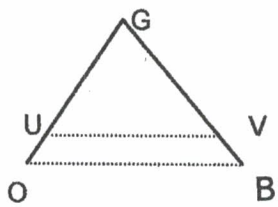
Why do giraffes have long necks?

The figures of the following exercises are wrong; they were drawn freehand. The dotted lines are parallel. The dimensions are all in centimetres. In each exercise calculate the missing dimension.

①

GO = 8
GB = 6
GV = 4

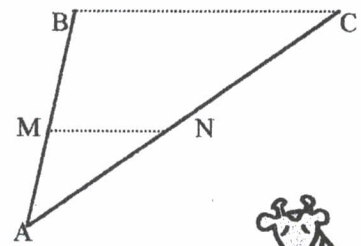
GU = ?

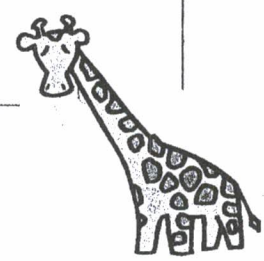


②

AB = 5
AM = 2
BC = 7

MN = ?

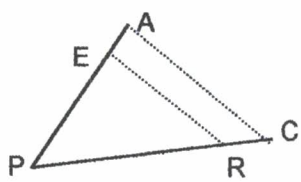




③

PC = 7
ER= 2,1
PE = 1,8
PA = 6,3

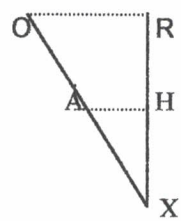
PR = ?



④

XA = 5
XO = 7
XH = 3

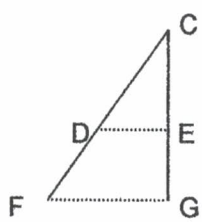
HR = ?



⑤

CE = 5
EG = 5
DF = 8

FC = ?

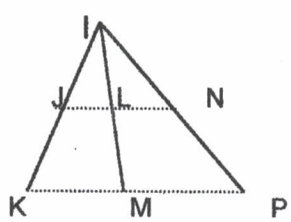


⑥

JL = 6

KM = 16
LN = 9

MP = ?



Answers

4,2	CAVE
2,8	ACEB
$\frac{16}{3}$	LLEM
$\frac{15}{4}$	EFEB
2	SEVA
8	HYEH
25	FEET
1,2	TEEFY
24	TESU

④	①	③	⑤	⑥	②

Read from right to left.

The French say : « Mettre quelqu'un en boîte »

What do the English say ?

Calculate the following expressions. Write the various steps ! Find your answers in the answer columns and notice the numbers next to them. They correspond to this code : 1 → A ; 3 → B ; 6 → C etc...
Write the corresponding letters in the boxes at the bottom of the page.

1) $3 \times 10^{-2} \times 0{,}5 \times 10^{4} \times 4$	5) $\dfrac{6+3\times10^{4}}{3\times2\times10^{4}}$	9) $\dfrac{12\times10^{-3}}{16\times10^{-4}}$
2) $\dfrac{5\times10\times4\times10^{3}\times3^{2}}{15\times10^{2}\times10^{4}\times12}$	6) $\dfrac{3\times10^{3}\times2\times10^{-2}\times3}{9\times10\times2{,}5\times10^{3}\times10}$	10) $\dfrac{1{,}5\times10^{7}\times4\times10^{-5}}{25\times10^{2}}$
3) $10^{8}-10^{4}$	7) $\dfrac{6\times10^{4}}{3\times10^{-4}}$	11) $\dfrac{15+10^{2}}{3\times10^{2}}$
4) $3\times10^{2}+5\times10^{3}-400\times10^{-1}$	8) $0{,}05+10^{4}+10^{-1}\times3$	12) $\dfrac{0{,}05\times10^{3}}{5\times10^{-2}}\times\dfrac{1}{2}$

Answers	Code	Answers	Code	Answers	Code
8×10^{-5}	12	4×10^{5}	84	10^{-2}	72
2	48	$\dfrac{3}{2}$	63	3	1
30 000,45	6	0,500 1	42	3 000,15	78
$\dfrac{3}{4}\times10^{-1}$	51	10^{-3}	15	6×10^{2}	36
60	75	7,5	45	0,005	24
$9\,999\times10^{4}$	54	$\dfrac{23}{60}$	33	10^{2}	81
2×10^{0}	66	104	27	10 000,35	57
$\dfrac{24}{100}$	3	0,8	69	$5{,}000\,1\times10^{-1}$	69
0,06	21	500	9	$\dfrac{3}{4}\times10^{-7}$	39
5	30	$0{,}2\times10^{9}$	18	$52{,}6\times10^{2}$	60

8)	5)	9)	4)	11)	11)	3)	5)	1)	6)	10)	5)	12)	2)	'	3)	11)	6)	7)

Why didn't Mrs SMITH put an advertisement in the paper when her dog was lost ?

Remove the brackets then simplify (without a calculator). Find the expression in the answers below. Notice the letters next to it and write these letters in the box containing the number of the exercise .

Exercises :

1	(3+2) - (-3-2) - (-3+2)	7	(-a - a) + (-2a + 6a)
2	(7+7) - (-7 - 7) - 7	8	(-7,5 + 4)- 2
3	5 + (1 - 2) - (8 - 3)	9	$7x - 8x - (19x - 23x) - 2x$
4	7 - 3a + (2a - 2 + 6a)	10	-(-0,5) + (3,5 - 1,5) - (6,5 + 1)
5	$-4x + 3x - (-3x - 3x)$	11	(-2 + 3) + 18 - (6 + 2a)
6	$-13x - (10x + 2x)$		

Answers :

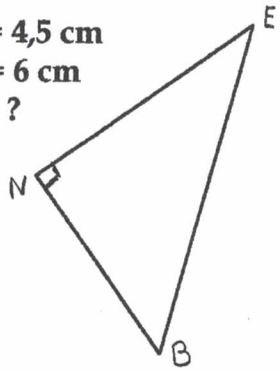
-14a	→	BY	-25x	→	BE	-11	→	AS	11	→	OG	5a + 5	→	AD	-2a	→	OR
21	→	NN	14	→	HY	17 + 5x	→	ST	4a	→	EN	21x	→	ON	-21x	→	DI
13 + 2a	→	IT	2a	→	USE	-13 +2a	→	ST	-1	→	CA	-5	→	RE	-5x	→	UT
25x	→	TH	7 - 9a	→	IN	5x	→	OT	-5,5	→	CA	x	→	RD	13 - 2a	→	HE

6	8	7	11	9	1	3	2	5	10	4

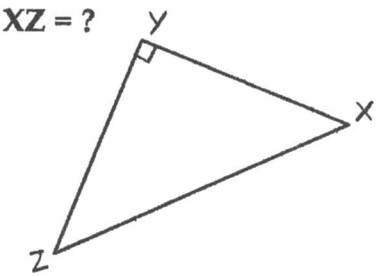
What does May Day (the first of May) celebrate in England ?

Calculate the missing length in the following triangles and check that the last triangle is right angled.
Find your answers in the answers below and notice the letters underneath. Write these letters in each box containing the number of that exercise.

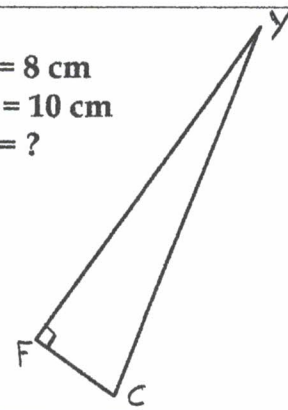
1)
NE = 4,5 cm
NB = 6 cm
EB = ?



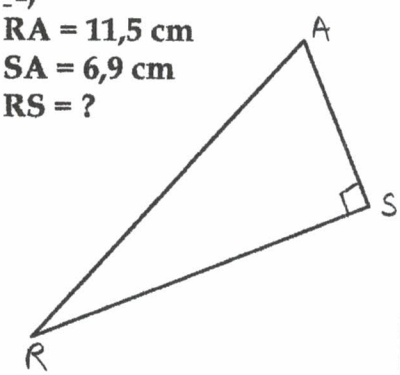
2)
YZ = 12 cm
XY = 5 cm
XZ = ?



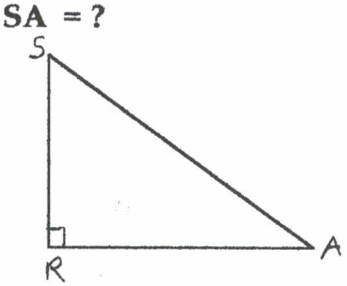
3)
YF = 8 cm
CY = 10 cm
CF = ?



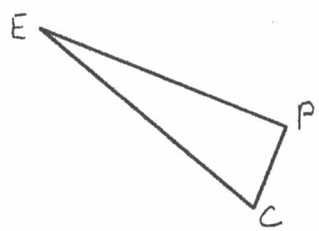
4)
RA = 11,5 cm
SA = 6,9 cm
RS = ?



5)
RS = 2 cm
RA = 3 cm
SA = ?



6)
PE = 8,3 cm
PC = 1 cm
EC = 8,5 cm



ANSWERS :

9,2	4,5	7	6	7,5	13	12	yes	no	3,6	6,7	17,4	$\sqrt{13}$
IVA	NIG	BYE	SPR	THE	LOF	BEC	COM	ARR	ESS	SPG	AUS	ING

1	6	4	2	3	5

Remember : PYTHAGORAS' THEOREM :
The square on the hypotenuse is equal to the sum of the squares on the other two sides in a right angled triangle.

Six children and two dogs were under just one umbrella. How come none of them got wet?

Expand or factorise the following expressions. Find your answers in the answer column and cross out the boxes that contain your answers. When you finish, print the letters from the remaining boxes in the squares at the bottom of the page. Read from right to left.

Exercises:

1) $13(-6 + x)$	6) $-7(-11 + 4x)$	11) $-8x + 8$
2) $-6 \times 2 - 6 \times x$	7) $36x - 6$	12) $-3(2x + 1)$
3) $(2 + x) \times 4$	8) $1{,}5(x - 3)$	13) $6x - 162$
4) $-3x + 9$	9) $2(4x + 1)$	14) $-4x + 8$
5) $-4(-2 + x)$	10) $15x - 5$	15) $-5(7x - 12)$

Answers:

E	G	N	D	J
$8x + 2$	$-6(3x + 1)$	$1{,}5x + 4{,}5$	$13x - 78$	$5(3x - 1)$

I	N	K	I	X
$-35x - 60$	$-8 + 4x$	$-8(x - 1)$	$-78x$	$3(-x + 3)$

Z	A	R	H	T
$8 + 4x$	$4(2x - 2)$	$-77 - 11x$	$-4(x - 2)$	$-6(2 - x)$

O	B	F	N	S
$5(-3x - 1)$	$-6(2 + x)$	$-6x - 3$	$6(x - 162)$	$-3(-x + 9)$

A	L	W	P	Q
$-6x + 3$	$-4{,}5 + 1{,}5x$	$8x$	$8 - 4x$	$-6(-6x + 1)$

E	T	U	I	L
$6(x - 27)$	$4x + 2$	$77 - 28x$	$-4(x + 2)$	$-35x + 60$

HOW CAN YOU TELL IF AN ELEPHANT HAS BEEN IN THE REFRIGERATOR ?

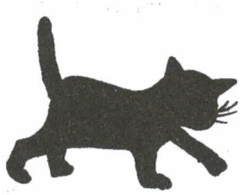
Solve each of the 12 equations below. Cross out the box that contains your answer. When you finish, print the letters from the remaining boxes in the squares at the bottom of the page.
Remember : don't forget to simplify !

1	$0,25+x=-0,25$	5	$x-4+4=13\times(-1)$	9	$x-5\times\frac{7}{8}=\frac{70}{16}$
2	$x-3,5=-7$	6	$-3\times7\times x\times1=0$	10	$0,5x=-13$
3	$-1,3=x+5,7$	7	$x+\frac{3}{4}=\frac{-1}{2}$	11	$\frac{-7}{-6}+x+\frac{-3}{5}=0$
4	$x+\frac{11}{33}=\frac{2}{3}$	8	$\frac{2}{-4}=x+\frac{3}{2}$	12	$-0,2x=2$

-13	-10	$\frac{22}{33}$	$\frac{1}{3}$	$\frac{-1}{4}$	$-3,5$	$\frac{-1,3}{5}$	$-0,5$
IT	ICK	YO	BAS	UCA	GO	NSE	EAC

-1	$-4,4$	0	21	-7	$\frac{1}{2}$	$\frac{-17}{30}$	$\frac{-53}{30}$
EHI	SFO	ALL	OTP	NDO	RIN	SAY	TSI

$10,5$	$-1,25$	-5	-2	$\frac{35}{4}$	-26	$\frac{3,5}{8}$	$2,2$
NTH	EM	EB	EAT	QUA	ISH	UT	TER



WHEN IS IT BAD LUCK TO HAVE A BLACK CAT FOLLOW YOU ?

Expand the following expressions and simplify. Find your answers in the answer column below. Notice the letters next to them. Write these letters in the boxes at the bottom of the page.

Exercises :

1)	$(8x-5)(2x-7)$	5)	$(3x+9)(4-8x)$	9)	$5x^2+(8x-10)(9-4x)$
2)	$(6x-6)(3x+2)$	6)	$(8x+3)(7+5x)$	10)	$3x-(5-10x)(4x-6)$
3)	$(8-2x)-(-3x+1)$	7)	$(-3-2x)(11+3x)$	11)	$(3x+2)(-11+3x)$
4)	$(4-3x)x11$	8)	$(-8x-5)(-10-5)$	12)	$4x^2+(3x+7)(5-x)$

Answers :

$-24x^2-60x+36$	HE	$16x^2-66x+35$	AUS	$24x^2-60x+36$	TH	$6x^2-26+8$	BE
$x^2+8x+35$	E	$18x^2-6x-12$	USE	$40x^2+105x+50$	O	$9x^2+27x-22$	OR
$-27x^2+32x-90$	CA	$18x^2-27x-10$	F	$9x^2-27x-22$	R	$-33x+44$	O
$x+7$	W	$-6x^2-3x-33$	X	$-40x^2+41x+21$	SE	$2x^2+x+35$	I
$-6x^2-31x-33$	Y	$40x^2-77x+30$	A	$16x^2-66x+35$	AM	$40x^2+71x+21$	N
$-27x^2+112x-90$	U	$40x^2+77x+30$	C	$33x-44$	EM	$40x^2-105+50$	ME

3	5	6	7	4	9	10	11	12	1	8	2

ANSWERS

1. A blackboard
2. Swallow the leader
3. There's been less inflation
4. A very small mother
5. A seasick zebra
6. There are more white sheep
7. A staircase
8. A rhythmic tick
9. U C L A
10. He has no proper tea
11. To have a frog in your throat
12. Merry Christmas
13. You can't hold your right elbow with your right hand
14. To throw money down the drain
15. An elephant on rollerskates
16. A flat minor
17. With ease
18. It was assaulted
19. A bricklayer
20. To call a spade a spade
21. Pigs might fly
22. It's raining cats and dogs
23. To see stars
24. Marcher sur des oeufs
25. He has no body to go with
26. Have a very nice holiday
27. It is too far to walk
28. They are both legends
29. They have smelly feet
30. To pull somebody's leg
31. Because her dog cannot read
32. The arrival of spring
33. It was not raining
34. You can see his footprints in the butter
35. When you are a mouse

TITRE : Le Duo MATHS-ANGLAIS. Travaux Croisés 4ème.

AUTEURS : - IOCHUM Marie-Odile
- LALLEMENT Marie-France
- POIROT Martine

PUBLIC VISE : - Elèves – Enseignants
- Niveau : 5ème à 3ème

RESUME :

Ce document est constitué de 35 fiches ludiques à contenu mathématique dans lesquelles toutes les consignes ont été rédigées en anglais.

Chacune contient une série d'exercices à effectuer pour trouver la solution d'une énigme ou d'une devinette.

OBJECTIF DE CES FICHES :

- proposer des activités créant une nouvelle motivation pour les maths et l'anglais,
- faire maîtriser davantage des thèmes mathématiques du programme,
- découvrir des jeux de mots anglais avec toutes les implications que cela entraîne,
- exploiter l'actualité anglaise (Halloween, Christmas…),
- découvrir un langage mathématique minimum en anglais.

MOTS-CLES : Travaux croisés 4ème – Maths-Anglais.