JUNIOR LYCEUM ANNUAL EXAMINATIONS 2005

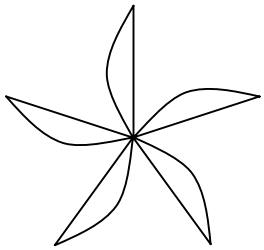
Educational Assessment Unit - Education Division

FORM 1	MATHEMATICS (MENTAL)	TIME: 10 minutes

Name: _____ **Class:** _____

Mark

- **ANSWER ALL QUESTIONS.**
- **EACH QUESTION CARRIES 1 MARK.**
- **CALCULATORS, RULERS, PROTRACTORS AND OTHER MATHEMATICAL INSTRUMENTS ARE NOT ALLOWED.**
- **WRITE DOWN YOUR ANSWER ONLY IN THE SPACE PROVIDED.**
- **THIS PAPER CONTAINS 10 QUESTIONS.**
- **ON YOUR DESK YOU SHOULD HAVE NOTHING EXCEPT FOR A PEN, A PENCIL AND THE EXAMINATION PAPER.**

	QUESTION	SPACE FOR WORKING IF REQUIRED
1.	Write as a **decimal number**: Twelve + six tenths + nine hundredths **Answer:_____**	
2.	Solve: $x - 3 = 4$ **Answer:_____**	
3.	Work out: $\frac{2}{3} + \frac{4}{9} \times \frac{3}{4}$ **Answer:_____**	
4.	What is the **order of rotational symmetry** of this shape?  **Answer:_____**	
5.	How much is **25%** of **Lm4.80**? **Answer:_____**	
6.	Simplify: $4x - 7x + x$ **Answer:_____**	

QUESTION	SPACE FOR WORKING IF REQUIRED

7. Two prime numbers are added.

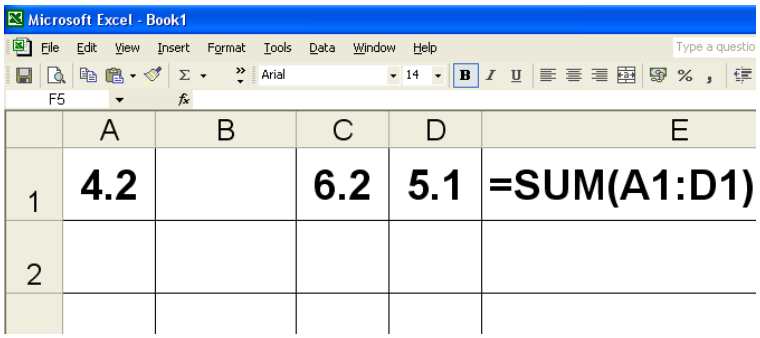
   The answer is 25.

   What are the numbers?

   Answer:_____and_____

8. The formula in cell E1 gives 20 as an answer.

   Write the missing number in cell B1.



	A	B	C	D	E
1	4.2		6.2	5.1	=SUM(A1:D1)
2					

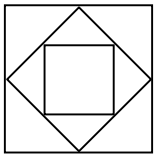
9. A frog's jump is **1 metre** long.

   How **many jumps** does it make

   if it travels **0.5 km**?

Answer:_____

10. Draw the missing **second** pattern:



1st pattern 2nd pattern 3rd pattern

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2005

Educational Assessment Unit - Education Division

FORM 1 **MATHEMATICS (Main Paper)** **TIME: 1 h 50 min**

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total Main	Mental	Global Mark
Mark																		

DO NOT WRITE ABOVE THIS LINE

Name: _____ **Class:** _____

CALCULATORS ARE NOT ALLOWED

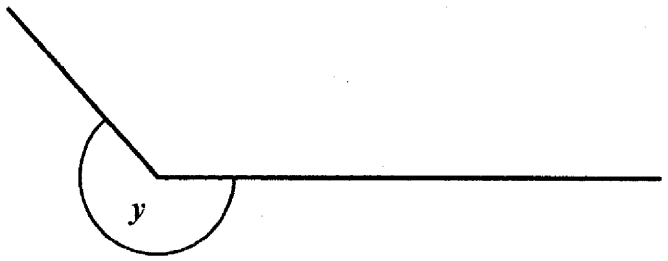
ANSWER ALL QUESTIONS.

1. Measure the following angles:

(a)

Answer: $x =$ _____ ^{o}

(b)



Answer: $y =$ _____ ^{o}

(c) What type of angle is angle x ? **Answer:** _____

(d) What type of angle is angle y ? **Answer:** _____

(4 marks)

2. Here are the winning **heights and distances** for some women's field events in an international competition.

Round each measurement: (a) to the nearest whole metre.

(b) to one decimal place.

Women's Events			
		(a) nearest whole metre	(b) one decimal place
High jump	**2.09 m**		
Shot-put	**21.95 m**		

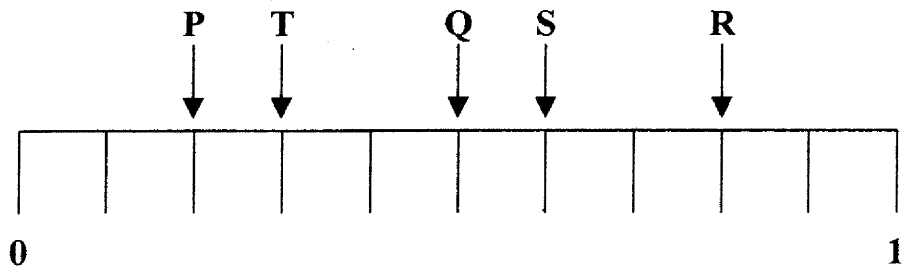
(4 marks)

3. Write which letter shows: (a) $\frac{1}{2}$ = _____**Answer**

(b) $\frac{3}{5}$ = _____**Answer**

(c) $\frac{1}{5}$ = _____**Answer**

(d) $\frac{3}{10}$ = _____**Answer**



(4 marks)

4. A **milkshake** recipe requires, **300 mℓ** of milk
240 mℓ of ice-cream
and **60 mℓ** of chocolate sauce.

(a) How many **millilitres** of milkshake will this recipe make?

Answer: _____**millilitres**

(b) What **fraction** of the milkshake is **ice-cream**? (Give your answer in its lowest terms.)

Answer: _____

(c) What **percentage** of the milkshake is **milk**?

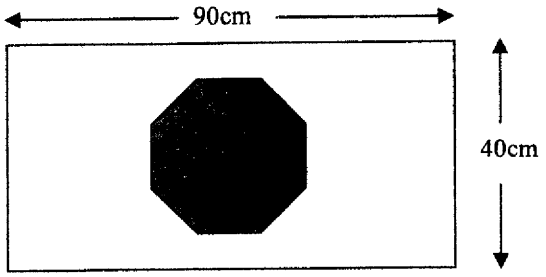
Answer: _____**%**

(d) What **decimal fraction** of the milkshake is **chocolate sauce**?

Answer: _____

(4 marks)

5. The diagram shows a flag.



(a) Work out the area of the flag.

Answer: _____ **cm²**

(b) 20% of this flag is grey. What area of the flag is grey?

Answer: _____ **cm²**

(4 marks)

6. Every morning Daniel catches the school bus. This leaves exactly at **8:05 a.m.**

During one particular week, he **noted the times** when it arrived at his school:

On **Monday** it arrived at **08:25**.
On **Tuesday** it arrived at **08:27**.
On **Wednesday** it arrived at **08:24**.
On **Thursday** it arrived at **08:24**.
On **Friday** it arrived at **08:31**.

How many **hours and minutes** did he spend on the school bus during that week?

Answer: _____ **h** _____ **min**

(6 marks)

7. Each of these sets of numbers has a **mean** of **10**.
What could the **missing** numbers be?

(a) 7 12 14 w **Answer:** $w =$ _____

(b) 11.2 10.4 8.7 x **Answer:** $x =$ _____

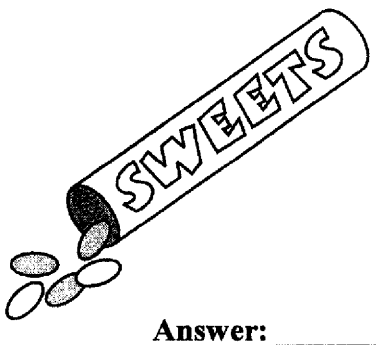
(c) 20 11 y z **Answer:** $y =$ _____ $z =$ _____

(d) Could y and z have different values? (YES or NO) **Answer:** _____

(e) Give a reason for your answer: _____

(6 marks)

8. **Jonathan** has a tube containing **96 sweets**.



(a) He gives $\frac{5}{12}$ of them to **Ellen**.
How many sweets does **she receive**?

Answer: _____sweets

(b) How many sweets does **Jonathan have** now?

Answer: _____sweets

(c) **Ellen** eats $\frac{3}{10}$ of her sweets.
How many sweets does **she eat**?

Answer: _____sweets

(d) **Jonathan** eats $\frac{5}{8}$ of his sweets.
How many sweets does **he eat**?

Answer: _____sweets

(e) What **fraction of the sweets** is now **left** altogether?

Answer: _____

(6 marks)

9. (a) Complete the LOGO command that draws a **square**:

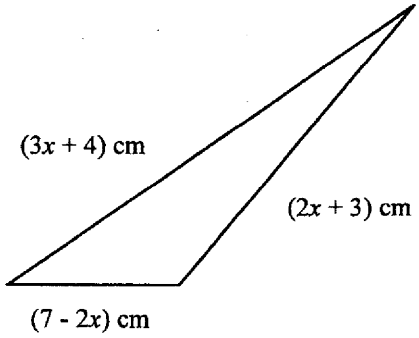
PD REPEAT __ [FD 10 RT __]

(b) Now write your own LOGO command that draws **another square** which has $\frac{1}{4}$ the **area** of the square in (a).

Answer: _____

(6 marks)

10.



(a) What is the **perimeter** of the above triangle in **terms of** x ? (Simplify your answer.)

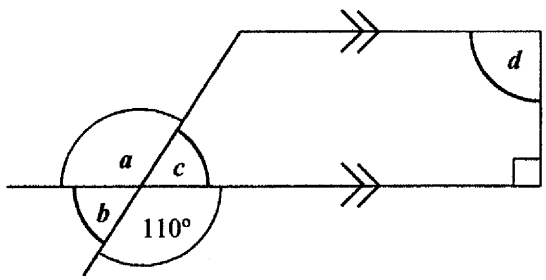
Perimeter = _____ **cm**

(b) What is the perimeter when $x = 2$?

Answer: _____ **cm**

(6 marks)

11. Look carefully at the diagram.



Work out the **missing angles**, giving a **reason** for each answer.

(a) a = _____ ° Reason: _____

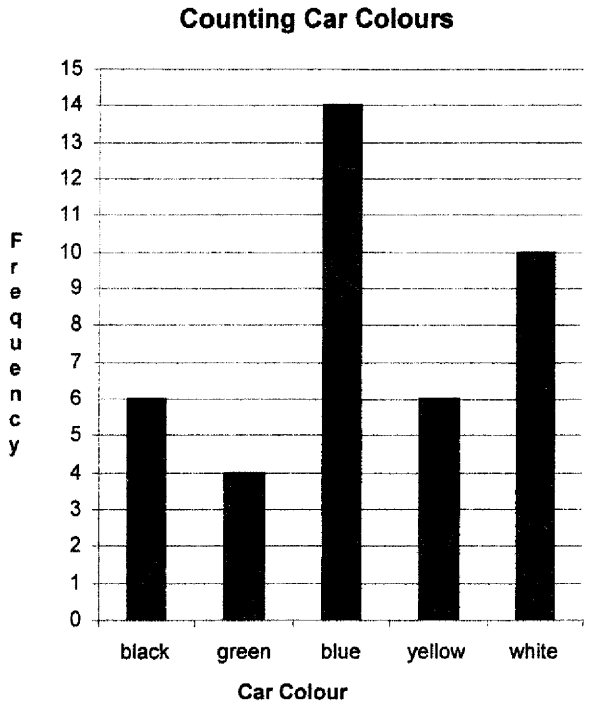
(b) b = _____ ° Reason: _____

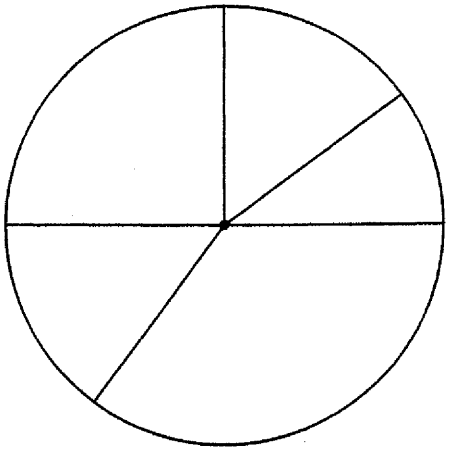
(c) c = _____ ° Reason: _____

(d) d = _____ ° Reason: _____

(8 marks)

12. The bar chart and the pie chart show the **same data**.





(a) **Label** the pie chart with the right colours.

(b) Which car colour is the **most popular**? **Answer:** _____

(c) What is the **total number** of cars?

Answer: _____

(d) What **angle** represents the number of blue cars?

Answer: _____ o

(e) Which **two** colours make up **half the total** number of cars?

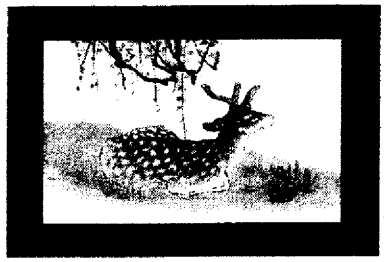
There can be **two** answers. Write them **both**.

Answer: _____ **and** _____

Answer: _____ **and** _____

(8 marks)

13. A **picture** is **80 cm long** and **50 cm wide**.
The picture is placed in a frame.



The frame has a border **5 cm** wide.

(a) What is the **area** of the **picture** only?

Answer:_____**cm^2**

(b) What is the **length** of the **frame**?

Answer:_____**cm**

(c) What is the **width** of the **frame**?

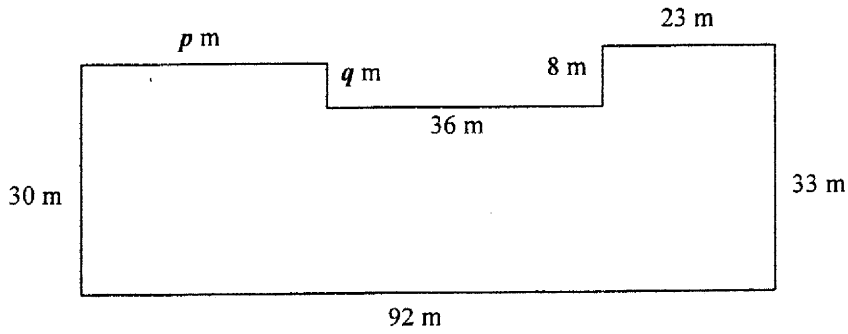
Answer:_____**cm**

(d) What is the **area of the frame** on its own?

Answer:_____**cm^2**

(8 marks)

14. **A field** is shaped like this:



(a) Work out the missing lengths p and q.

Answer: p = _____**m**
Answer: q = _____**m**

(b) A **fence** has to be put up all round the field.
How **long** would the fence be?

Answer: _____**m**

(c) Wood for the fence is sold in **lengths of 6 m**.
How many **lengths** of fence are needed?

Answer: _____**lengths**

(8 marks)

15. This **function machine** doubles the input x and then adds three, to obtain output y.

(a) Fill in:

When $x = 0$, $y =$ ☐

When $x = 1$, $y =$ ☐

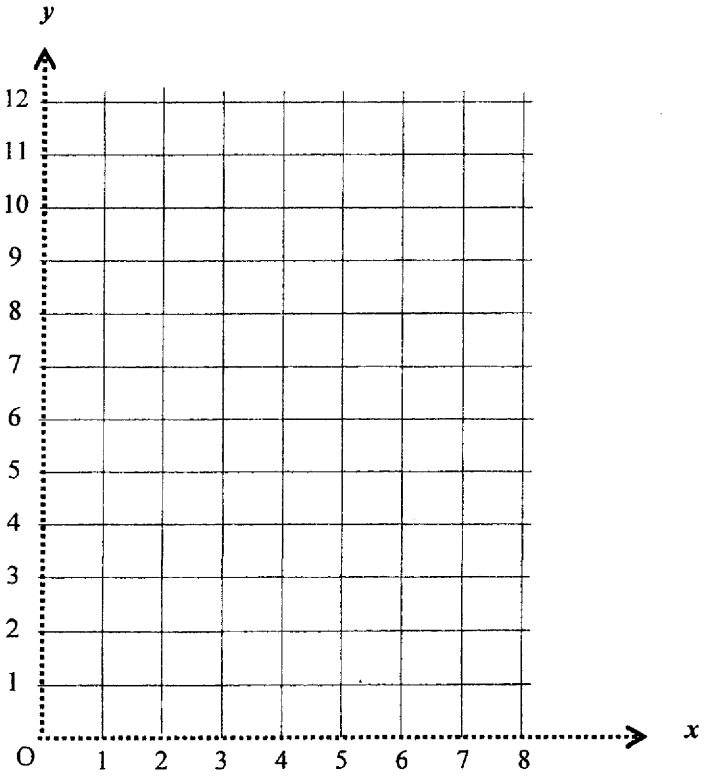
When $x =$ ☐, $y = 9$

When $x =$ ☐, $y = 11$

Copy your answers in the form of **co-ordinates**:

(b) (0, ___), (1, ___), (___ , 9), (___ , 11)

Now **plot** the four points that have these co-ordinates and then **join them**.



(8 marks)

End of paper