



STELLA MARIS COLLEGE, GZIRA
FORM 1

ANNUAL EXAMINATIONS 2013
MATHEMATICS

TIME: 2 hrs

Name: _____

Class: _____

ATTEMPT ALL QUESTIONS:

- ✓ Write your answers in the space available on the examination paper.
- ✓ Show clearly all the necessary steps and explanations in your working.
- ✓ Diagrams are **NOT** drawn to scale.
- ✓ The use of calculators is **NOT** allowed.
- ✓ This paper carries a total of 100 marks.

1. Work out the following:

a. $456 - 250 + 25 - 86$

b. $64 + (-17)$

c. $39 - (-93)$

d. $-12.24 - (+30.35)$

e. $100\,000\,000 \times (-1329.423)$

f. $-129843 \div (-100\,000)$

(6 marks)

2. Work out these problems.

a. Peter measured the length of the kitchen floor and found that it was 148cm.

Give the length of the kitchen floor:

i. to the nearest 100 cm

ii. to the nearest 10 cm

b. Peter then measured the breadth of the kitchen floor and found that it was 26cm.

Work out the area of the kitchen floor:

i. in m^2

ii. in mm^2

(4 marks)

3. Work out the following:

a. $36 \div 4 + 10 \times 8$

b. $25 \times 4 \div 10 + 600$

c. $(8 + 2) \times (8 - 2) \div (26 \div 2 - 3)$

(6 marks)

4. My bag weighs $1\frac{9}{20}$ kg. If I put 3 books which each weigh $\frac{3}{5}$ kg into the bag and also put 2 folders which each weigh $\frac{3}{8}$ kg into the bag,

a. What is the total weight of the three books?

b. What is the total weight of the bag and all its contents?

c. What fraction of the total weight of the bag are the books?

(6 marks)

5. Consider the following shapes.

a. Show all axes of symmetry for each of the following shapes.

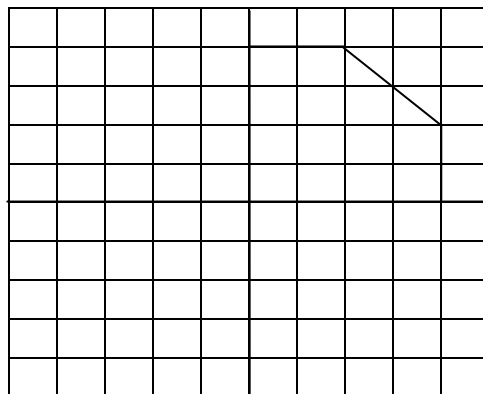
i.



ii.



b. Complete the shape below such that the two broken lines are the two axes of symmetry.

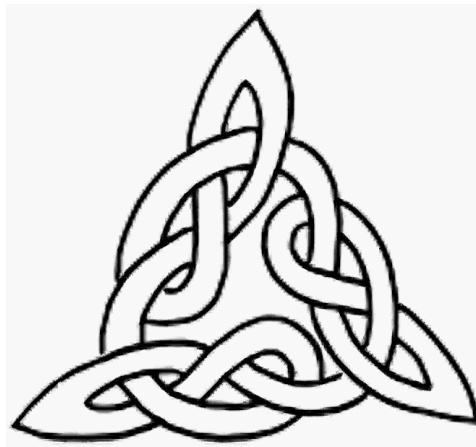


c. Which of the following shapes have rotational symmetry and in each case state the order of rotation?

i. Order of rotation _____.

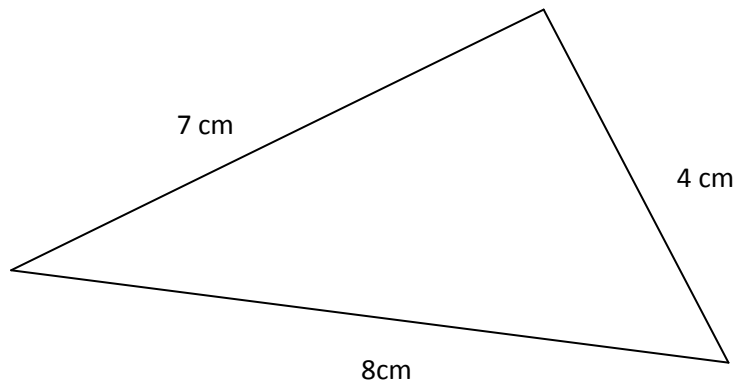


ii. Order of rotation _____.



(5 marks)

6a. Construct triangle ABC where AB measures 8cm, BC measures 7cm and BC is 4cm.



b. Measure the height of construction ABC.

c. Find the area of triangle ABC.

(7 marks)

7. The marks out of 100 in a maths test for nine members of class Form 1 Brown are:

72, 87, 73, 72, 86, 72, 77, 73, 73

a. Find the mean of these scores.

b. Find the median of these scores.

c. Find the mode of these scores.

d. Find the range of these scores.

(4 marks)

8. Work out the following:

a. Write down all the multiples of 7 between 25 and 60.

b. Write down all prime numbers between 25 and 60.

c. Express 25 and 60 into prime products.

d. Work out the LCM of 25 and 60.

e. Work out the HCF of 25 and 60.

(8 marks)

9. Consider the following sequence

8, 14, 20, 26, 32, ...

a. Describe the term-to-term rule of the sequence?

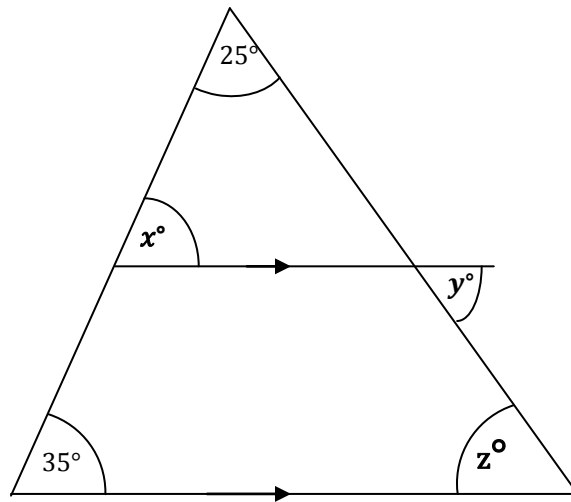
b. Generate the next three terms described by the term-to-term rule of the sequence?

c. Describe the position-to-term rule of the sequence?

d. Generate the next three terms described by the term-to-term rule of the sequence?

(8 marks)

10. Calculate the missing angles x° , y° and z° for the diagram below giving reasons for your answers.



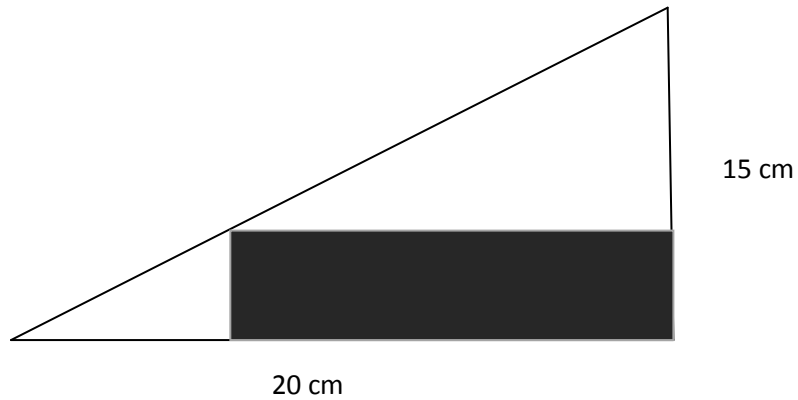
$$x^\circ = \underline{\hspace{2cm}}$$

$$y^\circ = \underline{\hspace{2cm}}$$

$$z^\circ = \underline{\hspace{2cm}}$$

(6 marks)

11. A right-angled triangle of dimensions 30 cm by 20 cm by 15 cm is made up from two triangular pieces of cardboard and a rectangular piece glued together as shown below. The area of the right-angled triangle is 250 cm^2 .

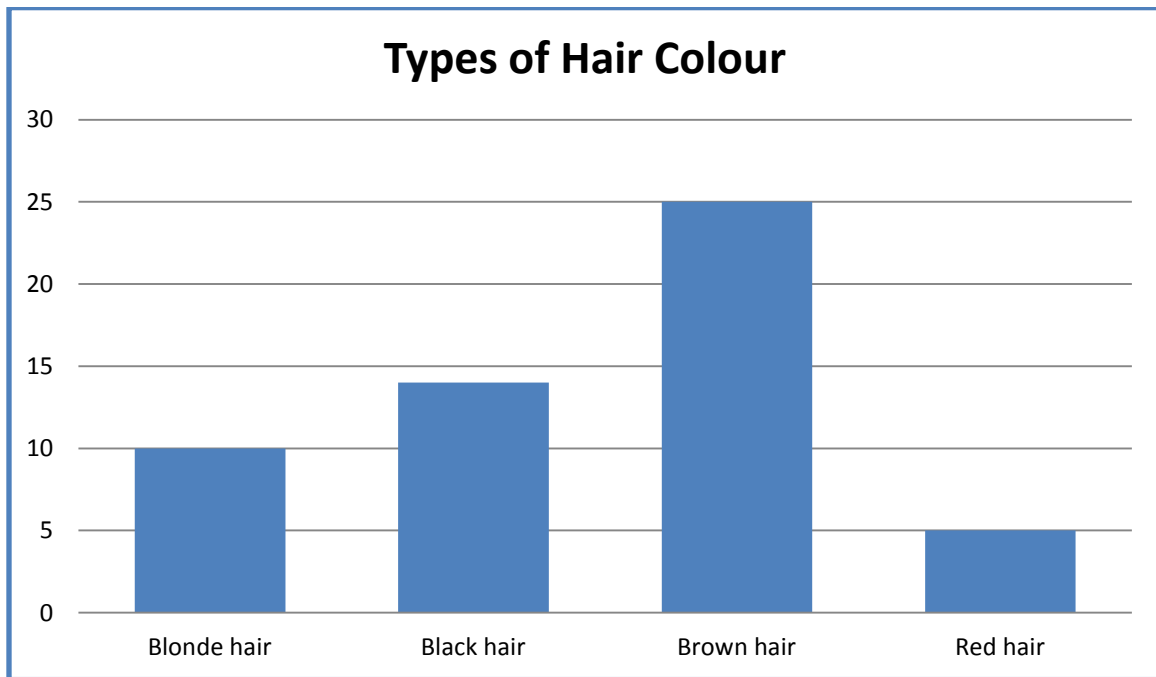


- i. If the rectangular piece measures 5 cm by 15 cm and is painted in black paint, what is the area of black paint?

- ii. The rectangular piece is then cut off, what is the area of the remaining white parts?

(4 marks)

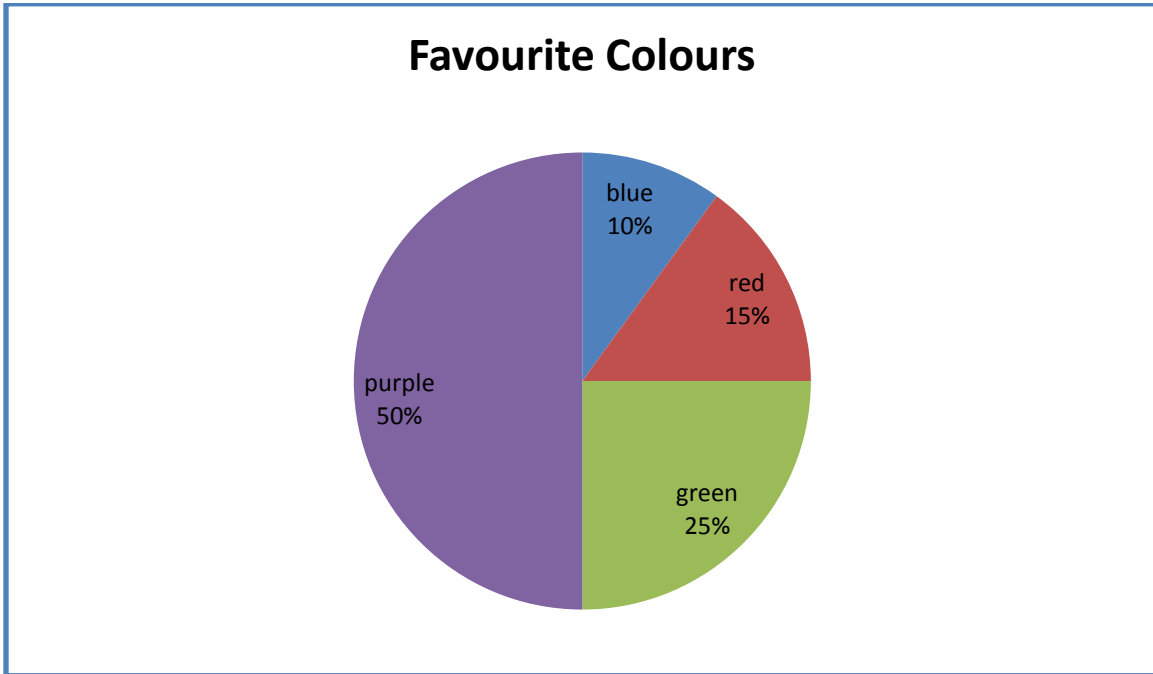
12a. Paul sets up a bar chart showing the types of hair colour of his classmates.



- i. How many classmates are there in Paul's class?
- ii. Which is the least common type of hair colour?
- iii. How many more brown haired boys are there then red haired boys?

(6 marks)

b. Paul continues with his survey and investigates about the favourite colours of his classmates. He sets up the collected data into a pie chart.



- i. Which is the most favourite colour in Paul's class?

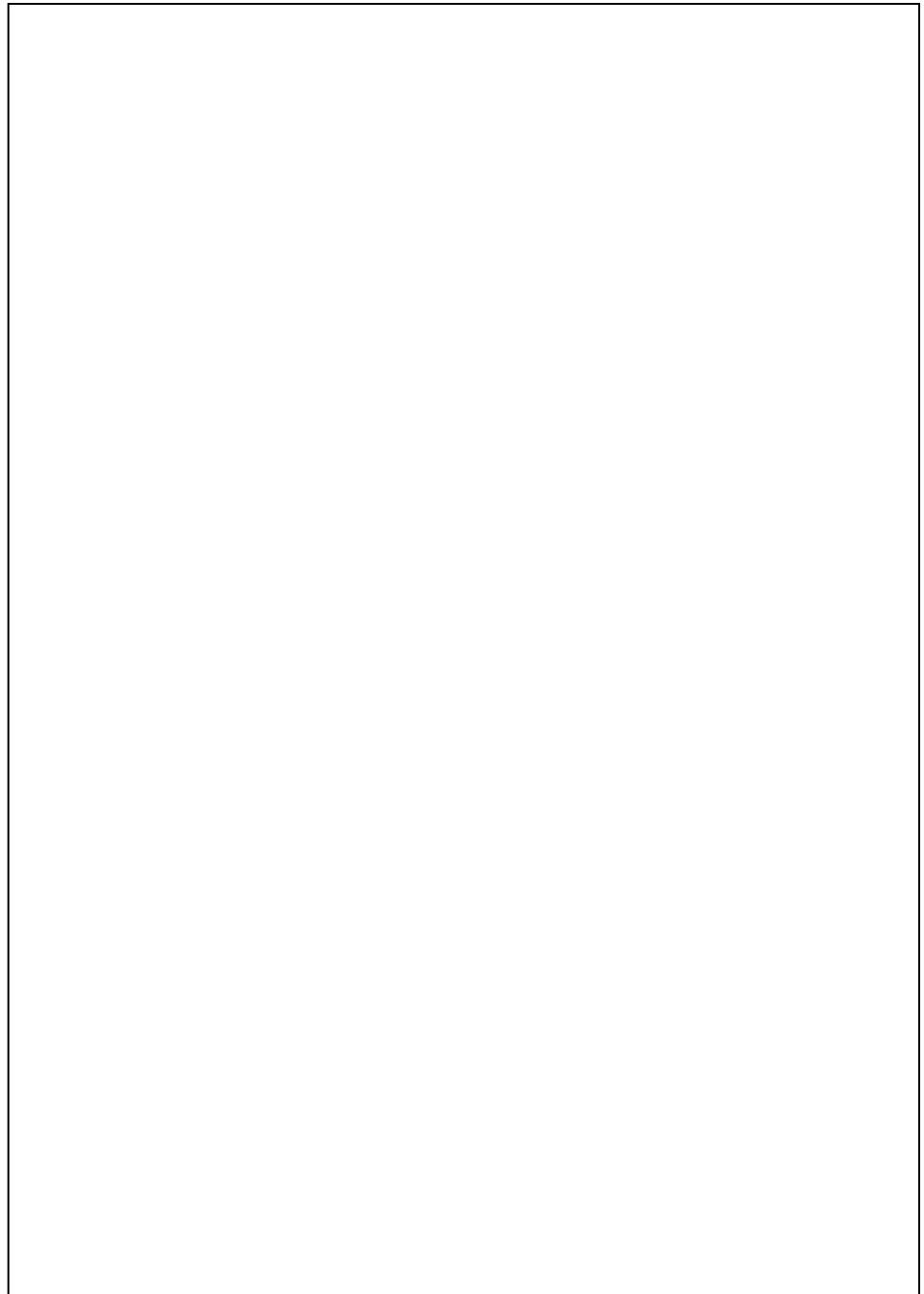
- ii. How many classmates like this colour?

- iii. How many classmates like blue?

(6 marks)

13. Follow the Logo commands below and draw the shape formed in the space provided.

```
pd  
rt 90  
fd 100  
lt 90  
fd 200  
rt 90  
fd 50  
rt 90  
fd 450  
rt 90  
fd 50  
rt 90  
fd 200  
lt 90  
fd 100  
lt 90  
fd 200  
rt 90  
fd 50  
rt 90  
fd 450  
rt 90  
fd 50  
rt 90  
fd 200
```



(4 marks)

14. Work out these problems.

a. Write the following sentence using algebra:

'I think of a number, add 7, multiply the result by 5 and get 35'

b. Simplify the following expressions.

i. $9p + 6p - 8p$

ii. $6x + 10y + 5x - 15y$

iii. $10s + 12s^2 + 5s - 15s^2$

c. Solve the following equations.

i. $x + 4 = 8$

ii. $4x = 48$

iii. $12 = y + 4$

iv. $19x - 16 = 22$

(12 marks)

15. On the grid provided plot out the following coordinates and join A to M and back to A to form a shape.

A(0,7)	B(2,7)	C(3,5)	D(1,5)	E(1,3)
F(3,2)	G(3,-10)	H(-3,-10)	I(-3,2)	J(-1,3)
K(-1,5)	L(-3,5)	M(-2,7)	A(0,7)	

(7 marks)

END OF PAPER