STELLA MARIS COLLEGE, GŻIRA   **ANNUAL EXAMINATIONS 2014**

FORM 2   **MATHEMATICS CALCULATOR PAPER**

Time: 1 hour

Instructions

This paper carries a total of 50 marks

Answer ALL questions

Show all your working

The use of non- programmable calculator is allowed

When not stated give your answers to 2 decimal places

Name: _____   Class: _____

1. Work out the following with the calculator giving your answers to 1 decimal place:

a) $(4.9)^2 + 8.3 \times 4.1$

b) $7\frac{3}{4} \times (6 + 9.7)$

c) $6.3 \times \left[\frac{(2.3-1.1)^2}{7.9}\right] - 4.3$

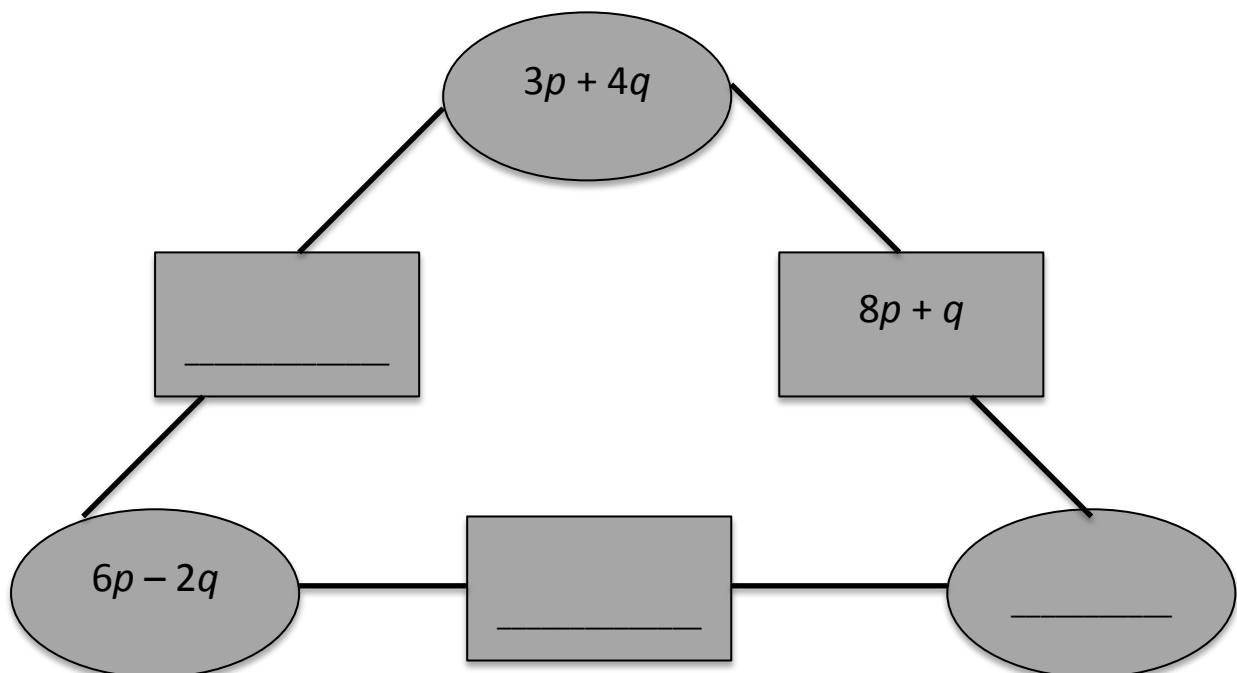d) $\dfrac{-4 \times (-7.3 + 4.8)^3}{21.24 + 10.1}$

(1 mark each)

2

2. A car hire firm charges €30 fixed fee and €42 per day for a family saloon car. A family is charged €366 for the hire period.

   a) For how many days did the family hire the car?

   Another family hires the same car for half the number of days, but the cost is now half of €366

   b) Has the company made a mistake? Explain and justify your answer.

   (3 marks)

3. In an algebragon, the expression in a rectangle is the **sum** of the expressions in the two ovals either side of it. What are the missing expressions here?

   (2 marks)

4. Solve the following equations:

a) $5x - 4 = 3 - x$ b) $5a - 3(a - 1) = 39$

c) $2(3y - 1) = 3(y - 1)$ d) $\dfrac{2x-1}{3} = \dfrac{x}{2}$
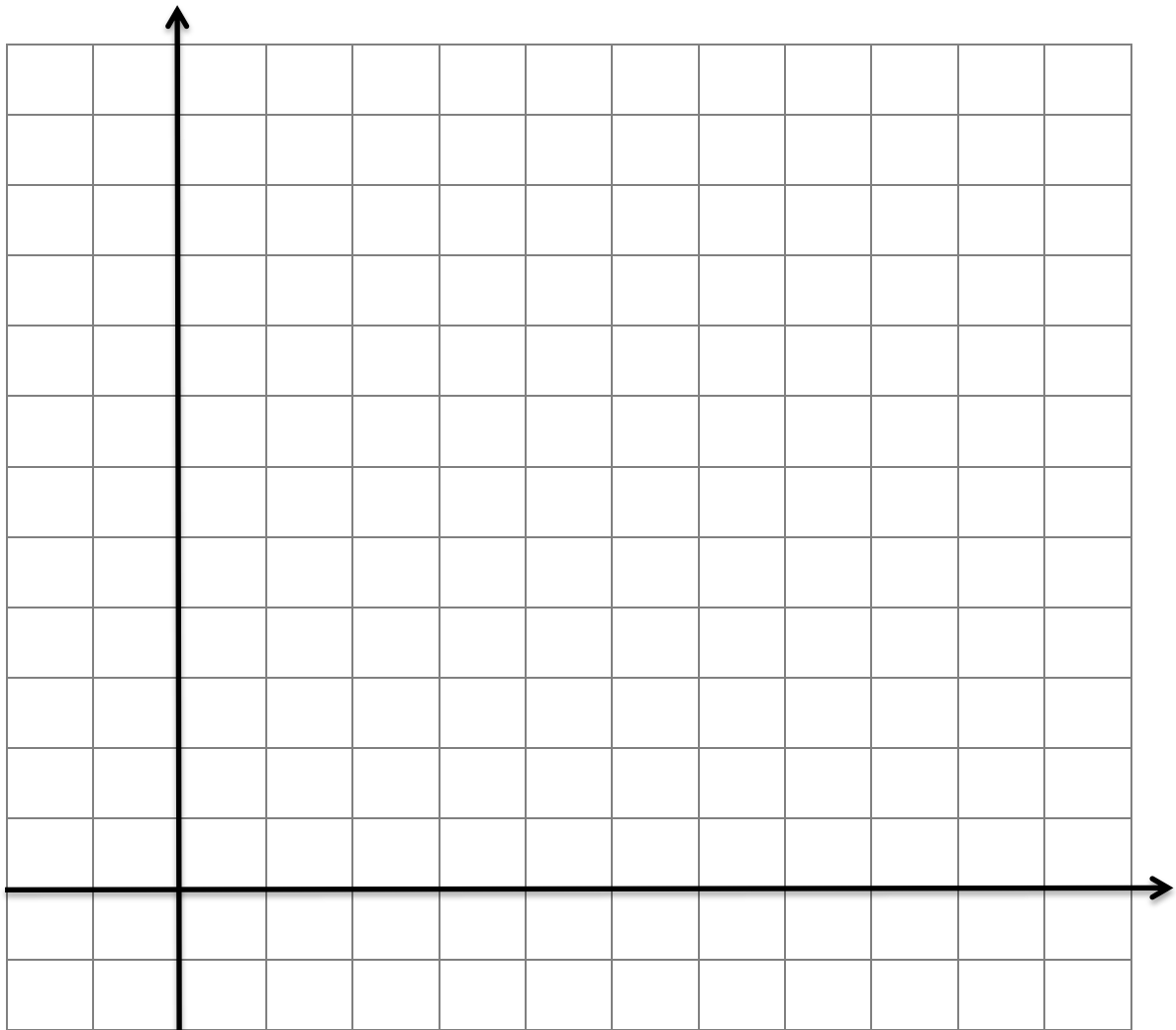
e) $3(y + 2) + 5(y - 4) = 2(y + 5) - (y - 6)$ f) $\dfrac{3y+2}{4} = \dfrac{y-5}{3}$

(2 marks each)

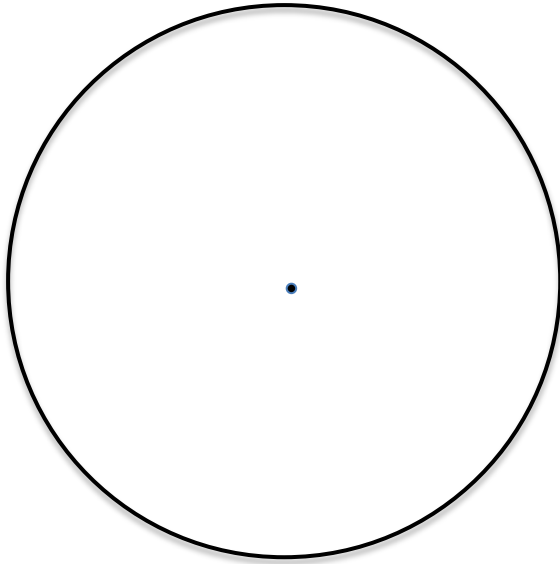5. The doors of the houses in St Albert Street are painted in the following colours:

Colour	Blue	Green	Red	White	Yellow
Frequency	7	11	6	4	2

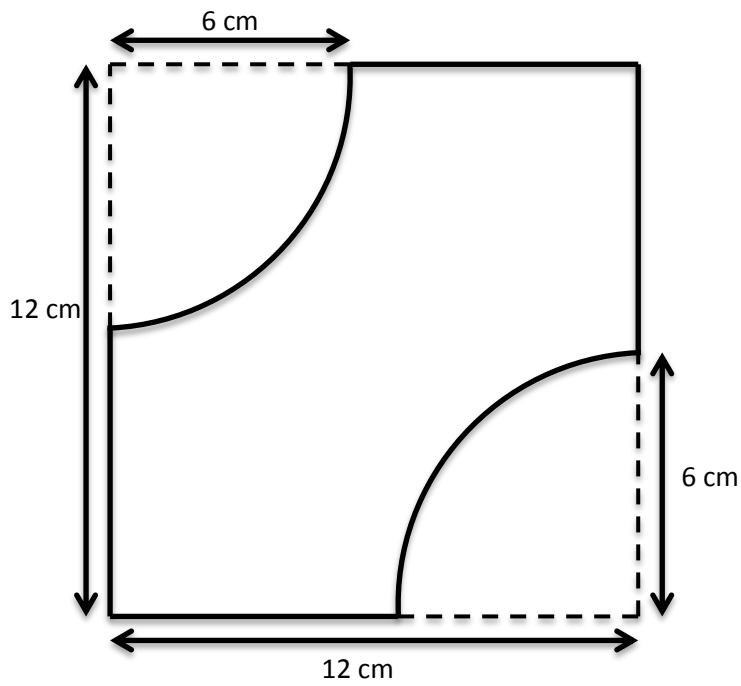a) Draw a bar chart to represent the above data.

(2 marks)

b) Draw a pie chart to represent the above data. (Show all your working)

(3 marks)

6. Find the area and perimeter of this diagram.

(3 marks)

7. a) Construct triangle ABC where AB = 8cm, AC = 10cm and angle BÂC=60°.

   b) What is the length of side BC?

   c) Bisect each side using compasses. Mark the point where they intersect as P.

(5 marks)

8. A garden hose is 100m long. For storage it is wound on a circular hose reel of diameter 45cm. How many turns of the reel are needed to wind up the hose?

(2 marks)

9. The heights (correct to the nearest centimetre) of a group of girls are:
    159, 155, 153, 154, 157, 162, 152, 160, 161, 157.
Find:
a) the mean height

b) the modal height

c) the median height

d) the range of the heights

(2 marks each)

10. Draw the graph of **y = 5x – 2** for values of x between -4 and 4. Use 2cm as 1 unit on the *x*-axis and 1cm as 2 units on the *y*-axis.

x	-4	-2	0	2	4
5*x*					
-2					
y					

(2 marks)

From your graph or otherwise, find:
   a) the gradient of the line

   b) the *y*-intercept

   c) the coordinates where the graph crosses the *x*-axis

   d) the value of y when *x* = 2.5

(4 marks)

☺ End of Paper ☺