

KULLEGG SAN BENEDITTU Secondary School, Kirkop

Mark

HALF YEARLY EXAMINATION – 2014/2015

Track 2

FORM 3

MATHEMATICS Track 2

TIME: 30 mins

Non Calculator Paper

Name: _____

Class: _____

Question	1	2	3	4	5	6	7	Total
Max. Mark	4	3	3	8	3	2	2	25
Mark								

Instructions to Candidates

- Answer all questions.
- This paper carries a total of 25 marks.
- Calculators and protractors are not allowed.
- All necessary working must be shown.

1. Fill in:

(a) $1.5 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

(b) $98.7 \text{ litres} = \underline{\hspace{2cm}} \text{ cm}^3$

(c) $634 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$

(d) $2350 \text{ ml} = \underline{\hspace{2cm}} \text{ litres}$

(4 marks)

2. (a) Simplify $12 : 60$ as much as possible.

Ans:

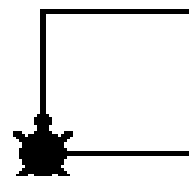
(b) Find the missing quantity:

: 6 = 40 : 48

(3 marks)

3. This logo statement draws a square of sides 50 turtle steps. Fill in the missing commands.

Repeat [FD RT]



(3 marks)

4. Work out these fractions and give your answers in their simplest form.

(a) $\frac{1}{6} + \frac{7}{12}$

Ans: _____

(b) $\frac{11}{24} - \frac{3}{8}$

Ans: _____

(c) $\frac{2}{9} \times \frac{3}{10}$

Ans: _____

(8 marks)

5. Work out:

(a) $(+10) - (-8)$

Ans: _____

(b) $4 \times (-2)$

Ans: _____

(c) $(-12) \div (+3)$

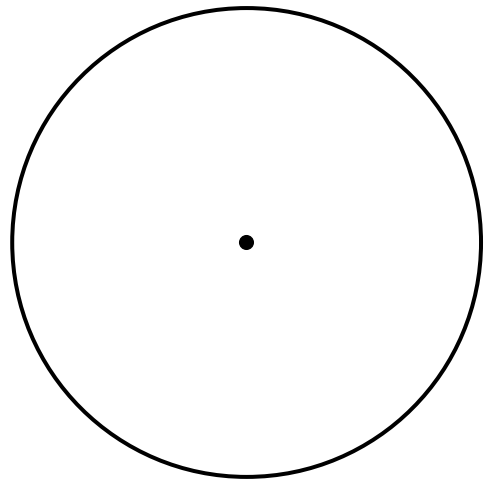
Ans: _____

(3 marks)

6. Use the circle below to draw and label:

(a) a chord

(b) a sector



(2 marks)

7. (a) Change $2\frac{1}{4}$ into an improper fraction.

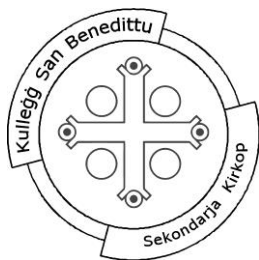
Ans: _____

(b) Change $\frac{17}{3}$ into a mixed number.

Ans: _____

(2 marks)

End of Non-Calculator Paper



KULLEGG SAN BENEDITTU

Secondary School, Kirkop

Mark

HALF YEARLY EXAMINATION – 2014/2015

Track 2

FORM 3

MATHEMATICS Track 2

TIME: 1hr 30mins

Main Paper

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	Total	Non	Global Mark
Max. Mark	8	7	2	2	8	6	7	2	6	3	11	4	9	75	25	100
Mark																

DO NOT WRITE ABOVE THIS LINE

Name: _____

Class: _____

CALCULATORS ARE ALLOWED BUT ALL NECESSARY WORKING MUST BE SHOWN.

ANSWER ALL QUESTIONS

1. (a) Underline the correct answer:

$a \times a =$ (i) a^2 (ii) $2a$ (iii) a (iv) 0

- (b) Simplify $2b + 5c + 4b - 3b + 2c$

Ans: _____

(c) Expand $5(3b + 2 - c)$

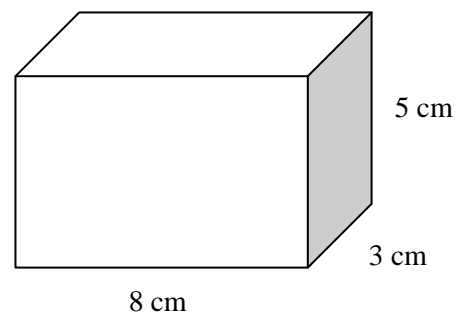
Ans: _____

(d) Solve $2x - 5 = 7$

Ans: _____

(8 marks)

-
2. (a) Find the **total surface area** of this cuboid.



Ans: _____ cm^2

- (b) What is the **volume** of the given cuboid?

Ans: _____ cm^3

(7 marks)

3. $-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5$

Choose numbers from the above list to fill in the missing numbers:

(a) $-4 - \boxed{} = \textit{lowest possible answer}$

What is the **answer** to the above calculation?

Ans: _____

(b) $-4 - \boxed{} = \textit{highest possible answer}$

What is the **answer** to the above calculation?

Ans: _____

(2 marks)

4. A programme is 200 minutes long. Write 200 minutes in hours and minutes.

Ans: _____ hours _____ minutes

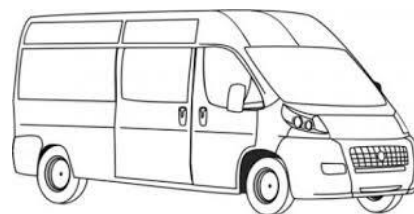
(2 marks)

5. (a) There are **420 vehicles** in a car park. 80 are vans and the rest are cars.

(i) What is the ratio of **vans** : **cars**. Simplify your answer.

Ans: _____ : _____

- (ii) The 80 vans in the car park are white and red in colour. The ratio of white vans is to red vans is 3 : 5. Find the number of white vans.



Ans: _____ vans

- (b) The scale of a drawing is 1 : 500. What **actual length** is represented by 2.8 cm? Give your answer in metres.

Ans: _____ m

(8 marks)

-
6. (a) Factorise: $6f + 15g$

Ans: _____

- (b) (i) Rearrange the formula $y = 3x - 2$ to **make x the subject of the formula**.

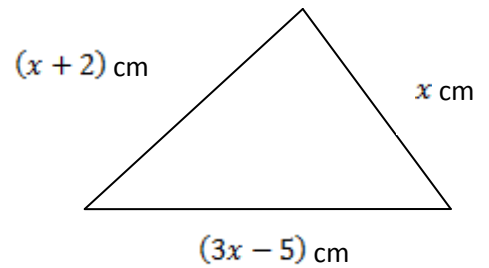
Ans: _____

- (ii) Hence find the value of x when $y = 4$.

Ans: $x =$ _____

(6 marks)

7. (a) Write down an **expression** for the perimeter of this triangle.



Ans: _____

- (b) **Simplify** your answer.

Ans: _____

- (c) The perimeter of this triangle is **27 cm**.

Use your answer in (b) to write down an **equation in terms of x** .

Ans: _____

- (d) **Solve** the equation in (c) to find the value of x .

Ans: $x =$ _____

- (e) Find the **length of the base** of the triangle.

Ans: _____ cm

(7 marks)

8. Jake cycles **12 km** at a speed of **18 km per hour**. How many **minutes** does this ride take?

Ans: _____ minutes

(2 marks)

9. (a) Underline the correct answer.

(i) The **sum** of the exterior angles of any polygon is:

(A) 180°

(B) 270°

(C) 360°

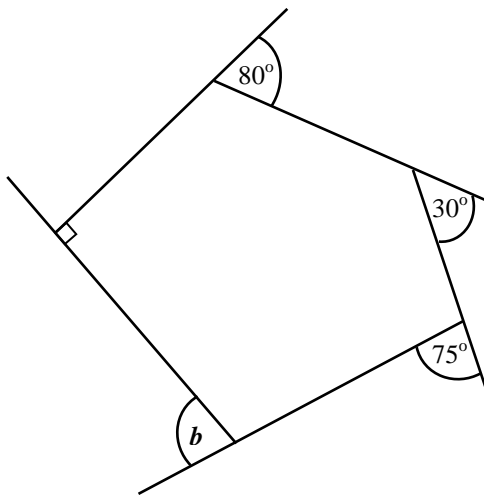
(ii) The size of an exterior angle of a **regular pentagon**.

(A) 360°

(B) 72°

(C) 110°

- (b) Calculate the size of the angle marked ***b*** in the following polygon.



Ans: $b =$ _____

(6 marks)

10. Find the gradient of a line AB, where $A = (-2, 5)$ and $B = (6, 3)$.

Ans: gradient = _____

(3 marks)

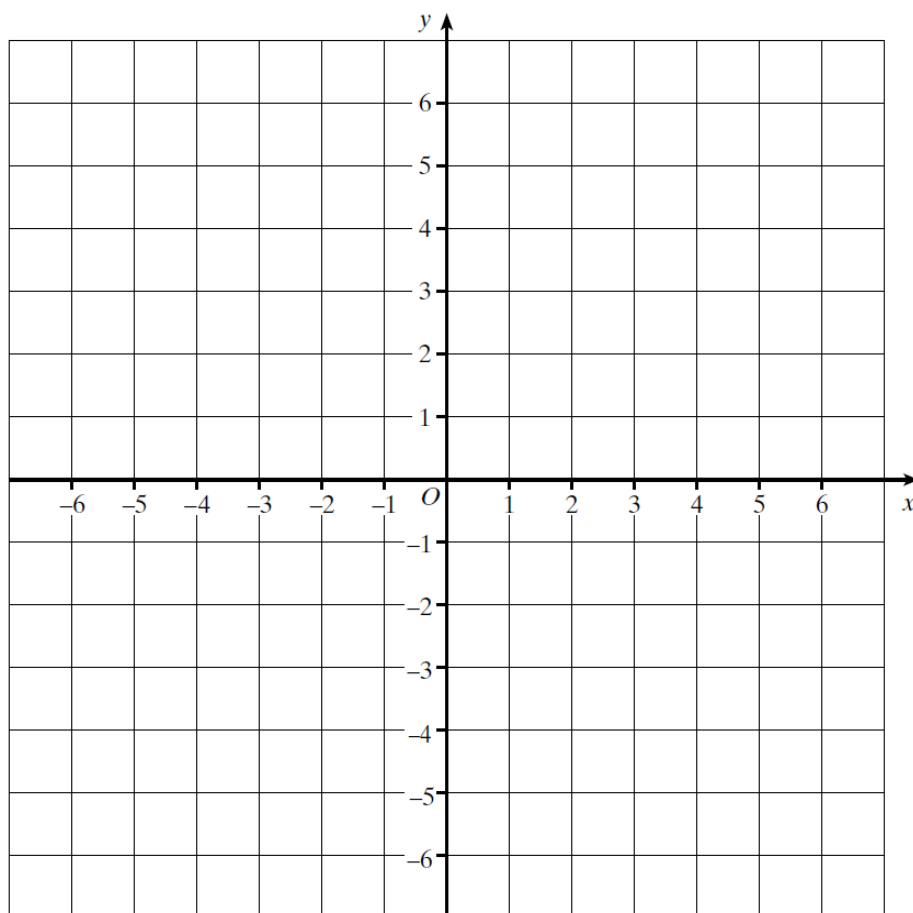
11. (a) **Complete** the table for the graph $y = 2x - 3$.

x	-1	0	2	4
$2x$				
-3			-3	
y		-3		5

- (b) Use the above table to write **4 co-ordinates**:

(____, ____) (____, ____) (____, ____) (____, ____)

(c) **Plot** the graph of $y = 2x - 3$ on the grid below.



(d) Use your graph to find the value of y when $x = 3$.

Ans: $y =$ _____

(e) What is the value of the y -intercept?

Ans: _____

(f) Does the point $(-4, -11)$ lie on the line? **Show your working.**

Ans: Yes ☐ No ☐

(11 marks)

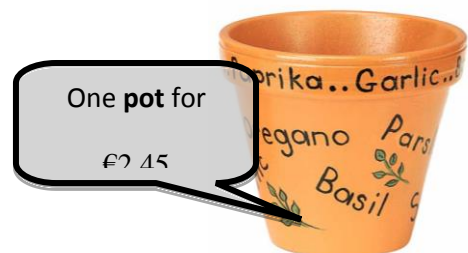
12. (a) Draw a circle of radius 4 cm.

- (b) Use this circle to **construct a regular hexagon** of side 4 cm.

(4 marks)

13. A shop sells garden pots for €2.45 **each**.

- (a) What is the cost of 4 pots?



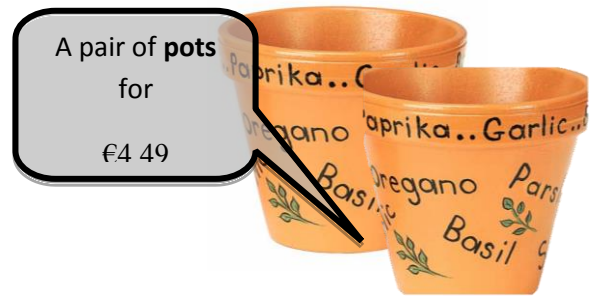
Ans: € _____

- (b) How many pots can you buy with €12?

Ans: _____ pots

The shop also sells the pots in **pairs**. One pair of pots costs €4.49.

- (c) How many pairs of pots can you buy with €12?



Ans: _____ pairs of pots

- (d) What is the **greatest** number of pots that you can buy with €16?

Ans: _____ pots

(9 marks)

END OF EXAM