KULLEĠĠ SAN BENEDITTU
Secondary School, Kirkop

HALF YEARLY EXAMINATION – 2015/2016

Level 6 – 7

YEAR 8   **MATHEMATICS Level 6 - 7**   **TIME: 30 mins**

Non Calculator Paper

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

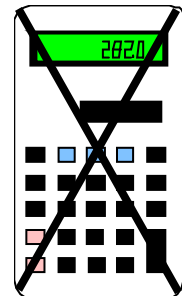**DO NOT WRITE ABOVE THIS LINE**

Name: _____   *Class*: _____

INSTRUCTIONS TO CANDIDATES:

Read all the questions carefully before you start answering.

- Answer all questions.
- This paper carries 25 marks.
- **Calculators, protractors** are **NOT ALLOWED.**
- On your desk you should have nothing except for **pen, pencil, ruler** and the **examination paper**.

1. (a) **Underline** the number in the set below, that is **both a multiple of 6 and a factor of 12.**

      8   12   18   24   30   40

   (b) What is the **highest common factor** of 30 and 45?

Answer: _____

(4 marks)

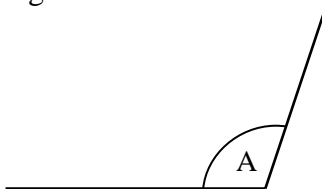2. In this magic square, the numbers in every row, column and diagonal add up to **45**.

   Work out the value of x.

		12
13		
18		x

Answer: x = _____

(2 marks)

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3. (a) **Estimate** the size of angle A.

Answer: A = _____°

   (b) **Underline** the **wrong** statement.
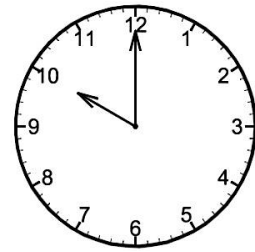
      i.   The angles in a triangle add up to 360°.

      ii.   The angles at a point add up to 360°.

      iii. The angles in a quadrilateral add up to 360°.
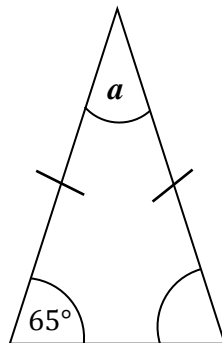
(2 marks)

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4. (a) The clock shows **ten o`clock**.

The size of the **reflex** angle formed between the hands of the clock is:

60°   90°   300°   330°

(b) The diagram shows an **isosceles** triangle.

Work out the size of angle *a*.

65°

°

Answer: *a* = _____

(4 marks)

5. (a) Simplify $8y + 5x - 10x - 4y$

Answer: _____

(b) Expand and simplify $5(x + 2) - 6$

Answer: _____

(3 marks)

6. Write the following decimal numbers in **ascending** order (**smallest to largest**):

0.27   0.217   1.072   0.027   0.207

Answer: _____, _____, _____, _____, _____

(2 marks)

7. (a) The **mean** of two numbers is 8. One of the numbers is 11.
What is the other number?

Answer: _____

(b) Find the **median** of the following numbers:

18   23   31   20   33   25

Answer: _____

(4 marks)

8. (a) Give an **estimate** for:
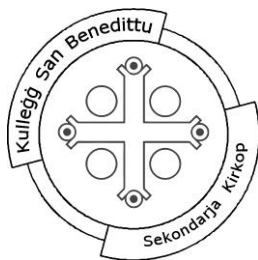
$$\frac{53.15 \times 9.4}{4.89}$$

Answer: _____

(b) An **empty** metal bottle weighs 0.25 kg.
John fills the bottle with 0.1 kg of oil.
How much does the **bottle with oil** weigh now?

Answer: _____ kg

(4 marks)

END OF PAPER

INSTRUCTIONS TO CANDIDATES:

Read all the questions carefully before you start answering.

- Answer all questions.
- This paper carries 75 marks.
- Calculators and mathematical instruments are allowed but all necessary working must be shown.

1. (a) Work out:

   (i) $25 - 5 \times 2 =$ (ii) $(16 + 11) \div 3 =$
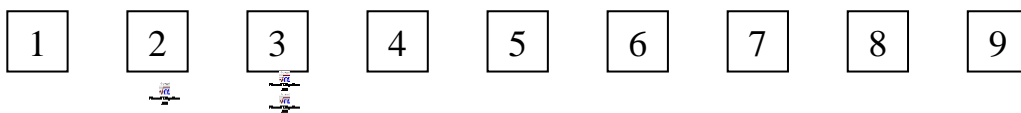

   Answer: _____   Answer: _____

   (b) Work out, giving your answer correct to **2 decimal places**:

$$\left(\frac{8.95 + 9.6}{5.2}\right)^2$$

   Answer: _____

   (4 marks)

2. Here are the numbers from 1 to 9.

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

(a) Choose the **four** numbers that are **prime**.

Answer: _____, _____, _____, _____

(b) Express 70 as a product of its prime factors.

Answer: x = _____

(c) Two lighthouses **A** and **B** can be seen from the top of a hill.
Lighthouse **A** flashes once every 8 seconds, while **B** flashes once every 15 seconds.
If they flash at the same time, after how many **minutes** will the lighthouses flash together again?
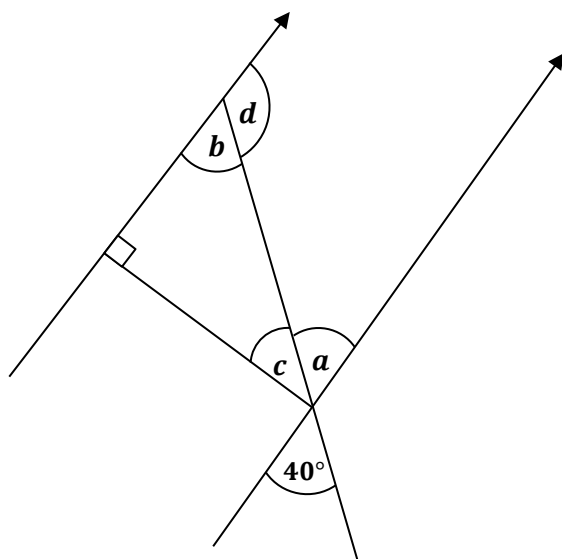
Answer: _____ minutes

(8 marks)

3. The diagram shows angles between two parallel lines.
Work out the size of angles a, b, c and d, giving a reason for each answer.
<u>Note</u>: Diagram is not drawn to scale.

Angle a = _____ °

Reason: _____

Angle b = _____ °

Reason: _____

Angle c = _____ °

Reason: _____

Angle d = _____ °

Reason: _____

(10 marks)

4. (a) Put <, = or > in the blank space to make the statements correct:
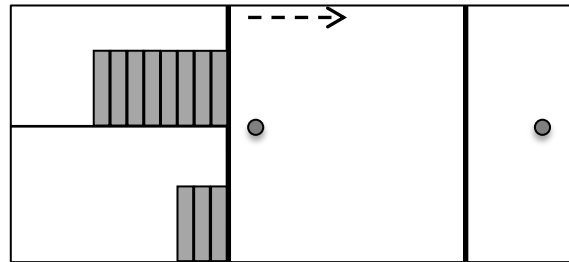
i) $\dfrac{4}{11}$ _____ $\dfrac{1}{3}$ ii) $\dfrac{3}{8}$ _____ $\dfrac{15}{40}$ iii) $\dfrac{5}{6}$ _____ $\dfrac{7}{8}$

(b) Maria keeps her files in a cupboard. As she slides the door to the right (as shown), Maria can see **⅓** of the files on the **top** shelf and 15 of the files are on the **bottom** shelf.

Work out the number of files:

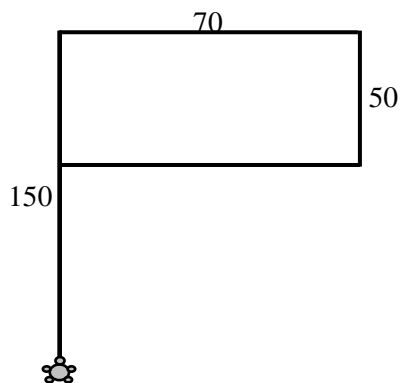i)   On the top shelf?   ii)   In the cupboard?

Answer: _____ files   Answer: _____ files

(7 marks)

5. Dexter uses LOGO to draw the flag shown in this diagram. The length of each side is given in turtle steps.

(a) **Fill in** the set of commands used to draw the flag.

```
PD
FD 150
RT _____
FD 70
_____ 90
FD _____
RT 90
_____ 70
```

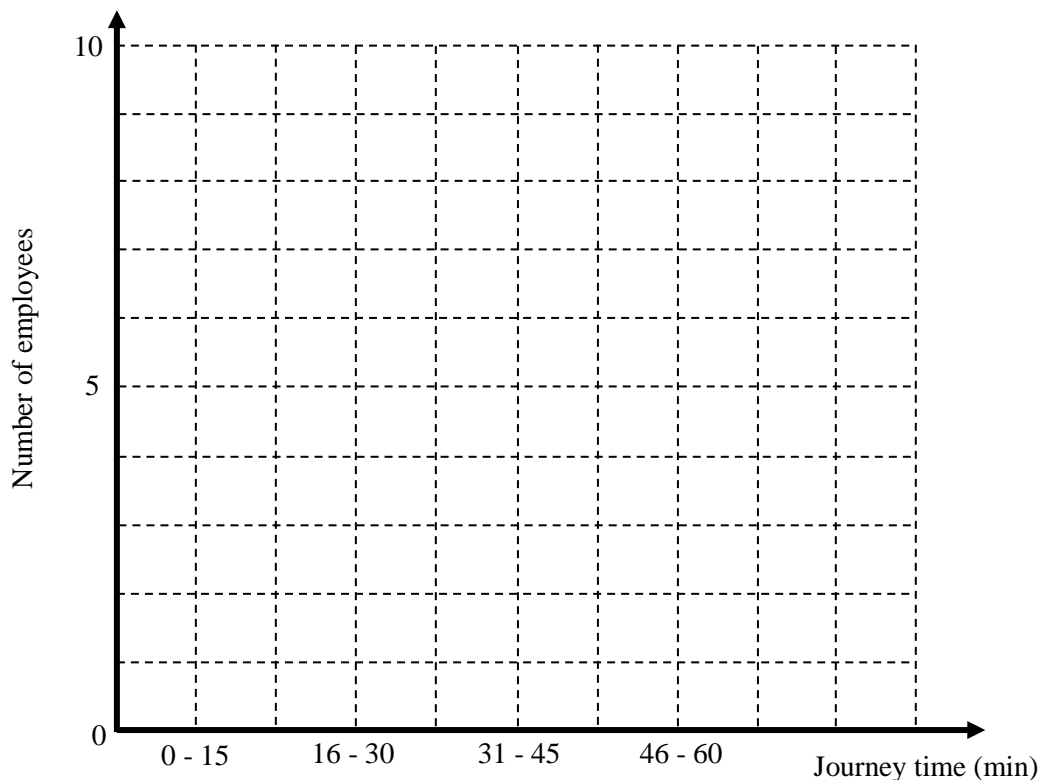(b) Work out the **perimeter** of the shape.

Answer: _____ turtle steps

(6 marks)

6. The frequency table below is based on a survey of the journey times of the employees working at 'Smart Time' insurance company.

Journey time (minutes)	0-15	16-30	31-45	46-60
Number of employees	3	9	5	4

(a) In the space below, draw a bar chart to represent the above information.

(b) **Fill in**:

   i)   A total of _____ employees took part in the survey.

   ii) _____ employees had a journey time of half an hour or less.

(c) Is it possible to find the number of employees who had a journey time of five minutes? Give a **reason** for your answer.

_____

_____

(8 marks)

7. A new healthy snack bar called '**Fibre Crunch**' is on sale.
    Each bar weighs 40 g. It contains 2 g of **protein**, 3 g of **fat**
    and the rest being **carbohydrates**.

    Fill in the table for the missing information.

FIBRE CRUNCH	Fraction	Decimal	Percentage
Protein	$\dfrac{2}{40}$		
Fat		0.075	
Carbohydrate			87.5%

(6 marks)

8. (a) A washing machine costs €350.
        A shop offers a **20% discount** from the original price.
        Work out the **new price** of the washing machine.

        Special Discount

        20%

        Answer: €_____

    (b) During a sale, Charlotte buys a coat for €60.
        The original price of the coat was €80.
        Work out the **percentage decrease**.

        Answer: _____%

(5 marks)

9. Mark travelled to Moscow. He arrived at 16:00 and noticed that the temperature was 2°C. By midnight the temperature dropped to –12° C.

(a) By how many degrees Celsius had the temperature fallen?

Answer: _____°C

At 08:00 the next morning, the thermometer indicated a new temperature.

(b) **Complete**:

(i) The temperature indicated by the thermometer is _____°C.

(ii) From midnight to 08:00 the temperature had gone up by _____°C.

(4 marks)

10. (a) Find the value of x in the following equations:

i) $x + 3 = 10$

Answer: $x =$ _____

ii) $2x - 2 = 14$

Answer: $x =$ _____

iii) $3(x + 10) = 15$

Answer: $x =$ _____

(b) Joanne had €*x* in her moneybox. On her birthday she managed to **double** this amount. Her brother **added** a further €5 to her amount.
Now she could buy a mobile phone costing €76.

i) **Form** an equation in *x* to show how Joanne managed to save her money to buy the mobile phone.

Answer: _____ = 76

ii) **Solve** the equation to find the original amount of money in Joanne's moneybox.
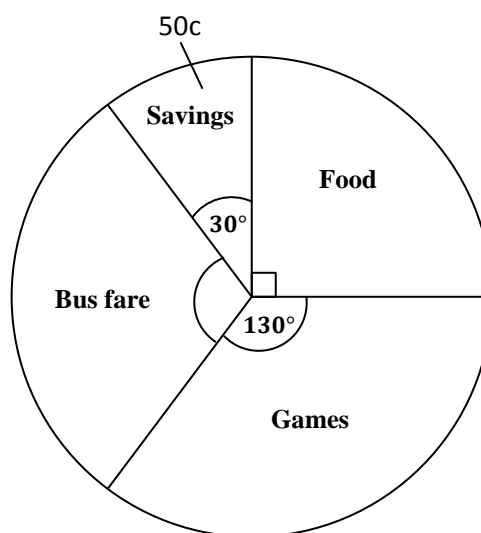
Answer: €_____

(10 marks)

11. The pie chart below shows how Andy spends the pocket money he receives every week.

Andy's **savings** amount to €0.50.

(a) How much does he spend on food?

Answer: € _____

(b) What fraction of his pocket money does he spend on food?

Answer: _____

(c) How much pocket money does Andy receive each week?

Answer: €_____

(d) On which item does Andy spend most of his money?

Answer: _____

(7 marks)

END OF MAIN PAPER