SECONDARY SCHOOLS ANNUAL EXAMINATIONS 2008

DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION

Educational Assessment Unit

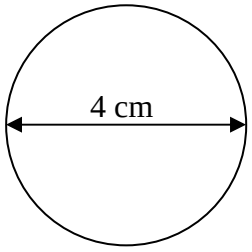
FORM 3 **MATHEMATICS (Non-Calculator Paper)** **TIME: 10 minutes**

Name: _____ **Class:** _____

Mark

INSTRUCTIONS TO CANDIDATES

- There are 10 questions to answer.
- Answer ALL questions.
- Each question carries 1 mark.
- Calculators, protractors and other mathematical instruments are not allowed.
- You are not required to show your working. However space for working is provided if you need it.

No.	Question	Space for Working
1	**Work out**: $3^2 - 2^3$ **Answer:** _____	
2	**Work out**: $\frac{3}{4} - \frac{3}{5}$ **Answer:** _____	
3	Work out the cost of 10 CDs at **€8.95** each. **Answer**: _____	
4	Rita had six 20 cent coins and a number of 10 cent coins in her purse. Altogether she had €2. How many 10 cent coins did she have? **Answer:** _____	
5	**Increase** €50 by 18%. **Answer:** _____	
6	The **best estimate** for the **circumference** of this circle is **A**. 12 cm **B**. 24 cm **C**. 36 cm **D**. 48 cm  **Answer**: _____	

No.	Question	Space for Working
7	In a **right-angled** triangle one of the angles is 63°. Write down the size of the **smallest angle** of the triangle. **Answer: _____**	
8	The best **estimate** for $\sqrt{98}$ is A. 10 B.20 C. 33 D. 50 **Answer: _____**	
9	In a class there are 25 pupils. The prefect is chosen at random. The probability that the prefect is a boy is $\frac{2}{5}$. How many girls are there in the class? **Answer: _____**	
10	A train travelled 360 km in 4 hours. Work out the **average speed** of the train. **Answer**: _____ km/h	

SECONDARY SCHOOL ANNUAL EXAMINATIONS 2008

DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION

Educational Assessment Unit

FORM 3 **MATHEMATICS (Main Paper)** **TIME: 1h 50min**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	NC	Main	Total

Name: _____ **Class:** _____

Answer all questions.

1 **Use your calculator** to find $\sqrt{345.96}$. Give your answer

(i) as a **decimal number** _____

(ii) in **standard form** _____

(4 marks)

2 In a school there are 760 students. $\frac{3}{5}$ of the students are girls.

(i) How many **girls** are there in the school?

Answer: _____ girls

(ii) A **quarter** of the boys in the school play **basketball**. How many boys play basketball?

Answer: _____ boys

(4 marks)

3 (a) Work out 4% of 268 km.

Answer: _____ km

(b) Write 20 cent as a **percentage** of €1.60.

Answer: _____ %

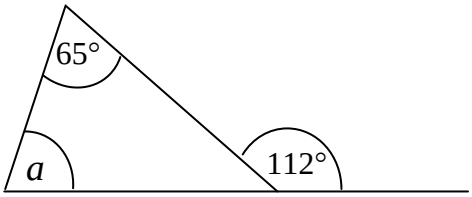
(c) Write $\frac{9}{20}$ as a **percentage**.

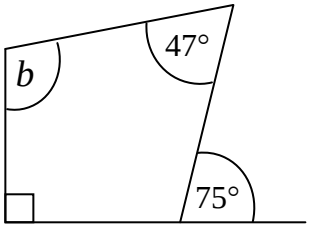
Answer: _____ %

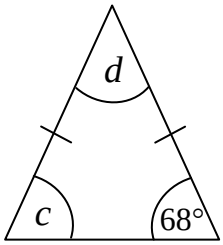
(4 marks)

---

4 Work out the size of the marked angles.





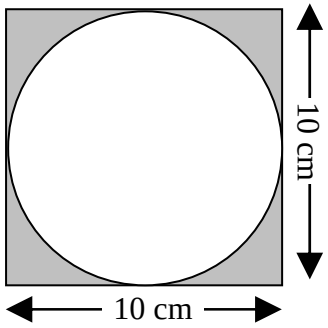


a = _____ *b* = _____ *c* = _____ *d* = _____

(4 marks)

---

5 The diagram shows a **circle** inside a **square**.



(i) Use the formula $\boldsymbol{A = \pi r^2}$ to work out the **area of the circle**, correct to **1 decimal place**.

Answer: _____ cm^2

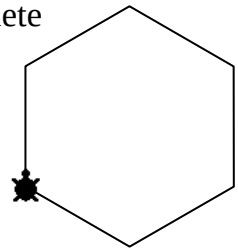
(ii) Work out the **area** of the **shaded region**, correct to **1 decimal place**.

Answer: _____ cm^2

(4 marks)

---

6 (a) The perimeter of this regular hexagon is 210 turtle steps. Complete the LOGO statement to draw this **regular hexagon**.



PD REPEAT _____ [FD _____ RT _____]

(b) (i) Use compasses to draw a **circle** having a **radius** of **3.5 cm**.

(ii) Use this circle to draw a **regular hexagon**.

(6 marks)

---

7 (a) **Complete** the following number sequences.

(i) 10, 17, 24, _____, 38, _____ (ii) 1000, 100, 10, _____, _____

(b) A sequence is formed as follows. Start with 5, and each time **double the number** and **subtract 2**. Write the **first five numbers** of the sequence.

_____

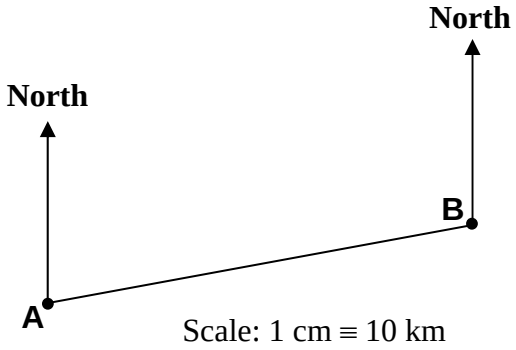
(c) **Describe** the following number sequence in words: 64, 32, 16, 8, 4, …

_____

(6 marks)

---

8 The diagram shows the journey of an aircraft flying from A to B.



(i) Use your **protractor** to find the **bearing** of **B from A**. _____

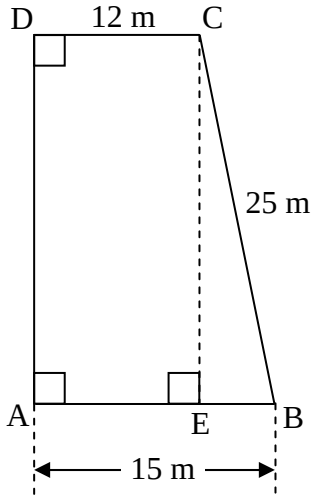
(ii) Work out an **estimate** for the **distance** travelled by the aircraft when flying from A to B. _____ km

(iii) The aircraft flies from B to C, a distance of 45 km. The bearing of C from B is 115°. Mark the **exact** position of C in the above diagram.

(6 marks)

---

9 ABCD is a **trapezium**.



(i) Write down the **length of BE**.

BE = _____ m

(ii) Use **Pythagoras theorem** to find the length of CE, correct to **2 decimal places**.

CE = _____ m

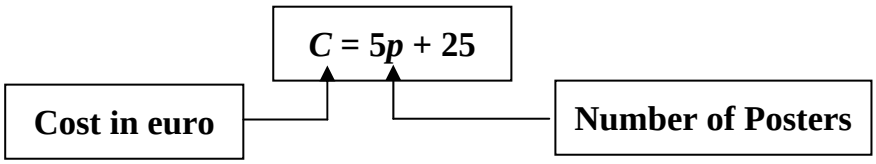
(iii) Work out the **area** of the trapezium, correct to the **nearest m^2**.

Area = _____ m^2

(6 marks)

---

10 Primrose Printing Company uses the following formula to work out the cost of printing posters. ***C*** represents the cost in euro and ***p*** represents the number of posters.



(i) Work out the **cost** of printing 50 posters.

Answer: €_____

(ii) A Youth Club spent €175 on posters. How many posters were bought?

Answer: _____ posters

(iii) Another printing company charged €10 for each poster. Write a **formula** for the cost, *C*, of buying *p* posters.

Answer: *C* = _____

(6 marks)

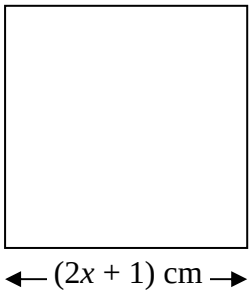
---

11 (a) **Solve** the equations.

(i) $3p - 5 = p + 8$ (ii) $5(q - 7) = 63$

Answer: _____ **Answer**: _____

(b) The perimeter of this **square** is 32 cm.
Write an equation in *x* and solve it to find the value of *x*.



Answer: *x* = _____

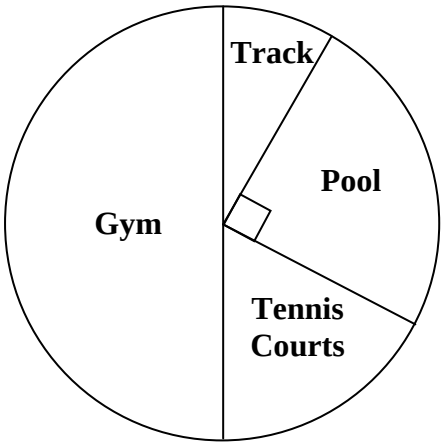
(8 marks)

---

12 (a) The pie chart shows data on the facilities of a sports centre most often used by a group of 40 women.

(i) How many women use the **pool**?

(ii) 3 women use the Track. How many women use the **Tennis Courts**?



Answer: (i) _____ (ii) _____

(b) A group of students were asked how long (in minutes) it took them to travel from home to school. Their answers are given below.

18	22	7	52	35	12	34	41
55	18	9	22	39	58	7	12
19	24	37	51	20	11	44	56
37	23	16	48	26	42	8	14

(i) Use this information to complete this frequency table.

Time (minutes)	Tally	Frequency
0 – 9		
10 – 19		
20 – 29		
30 – 39		
40 – 49		
50 – 59		
Total		

(ii) How many students take less than 20 minutes to go to school from home?

Answer: _____

(8 marks)

13 (a) Simplify: **56 cm : 21 cm**

Answer: _____

(b) Two children share €90 in the ratio 4 **:** 5. Work out the **largest share**.

Answer: €_____

(c) The ratio of a map is **1 : 50 000**.

(i) The map distance between two towns is 8**.**5 cm. Work out the **real distance** between the two towns, giving your answer in **kilometres**.

Answer: _____ km

(ii) The length of a road is 1**.**6 km. Work out the **map distance**.

Answer: _____ cm

(8 marks)

---

14 At a sale, items are sold at a **discount** of 20%. Maria is using a spreadsheet to work out the sale price on a number of items.

	A	B	C
1	Item	Trainers	Football
2	Cost per item	€35**.**90	€26**.**85
3	Quantity	2	5
4	Total Cost (before discount)	€71**.**80	
5	Discount	€14**.**36	
6	Sale Price	€57**.**44	

(i) Write the **formula** that Maria used in

Cell B4: =_____ **Cell B6:** =_____

(ii) Work out the **amount** (in €) that Maria will get in

Cell C4: €_____ **Cell C5**: €_____ **Cell C6**: €_____

(8 marks)

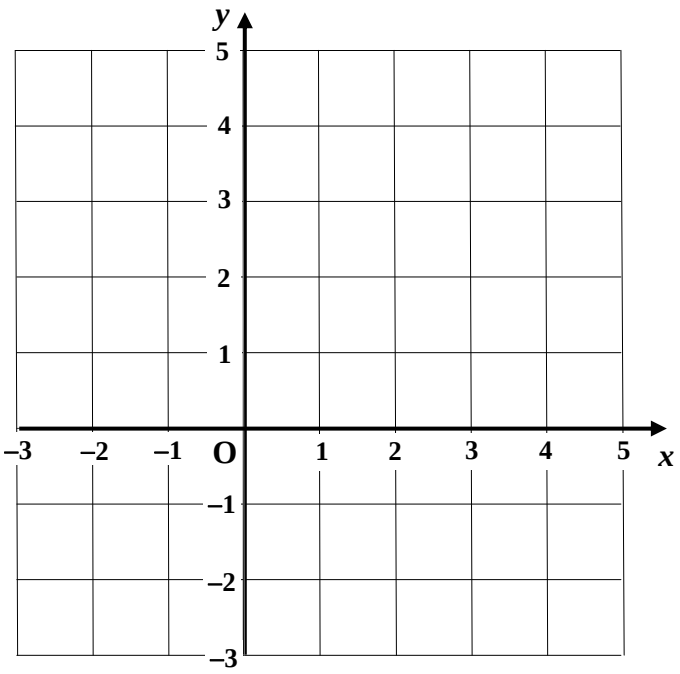
---

15 (a) The equation of a line is $y = x - 1$.

(i) **Complete** the table to find the coordinates of three points on the line.

x	–2	0	4
y	–3		

(ii) Use the table to draw the graph of $y = x - 1$.



(b) The equation of another line is $y = 3 - x$.

(i) **Complete** the table to find the coordinates of three points on the line.

x	–2	0	4
y	5		

(ii) **On the same graph**, draw the graph of $y = 3 - x$.

(c) Write the **coordinates** of the point where the two lines meet.

Answer: (____ , ____)

(8 marks)