Name:

OUNDLE
School

2015 Junior Entrance Examination
First Form Entry

Mathematics

Time Allowed: 1 hour

No calculators allowed

Instructions

- Attempt all the questions
- All working and answers must be shown on this paper. Marks will be given for demonstrating your method.
- Do not spend too long working on any particular question and do not worry if you do not manage to complete every question.
- You may work in pen or pencil.

1.

(a) Work out $63 + 78$.

Answer .....

(b) Work out $46342 - 7085$.

Answer .....

(c) Work out 69×32.

Answer .....

(d) Work out $9432 \div 3$.

Answer .....

(e) Work out $6732 \div 17$

Answer .....

(f) Work out $37\,824 + 47\,651 - 37\,821$.

Answer .....

2. Write down the thousands digit in 28760998

Answer .....

3. Calculate the following

(a) $9 + 7 - 5 + 3 - 1$

Answer .....

(b) $9 \times (-5) \times 2 \times (-1)$

Answer .....

4. Insert brackets to make the following correct

(a) $3 \times 6 \div 2 + 1 = 6$

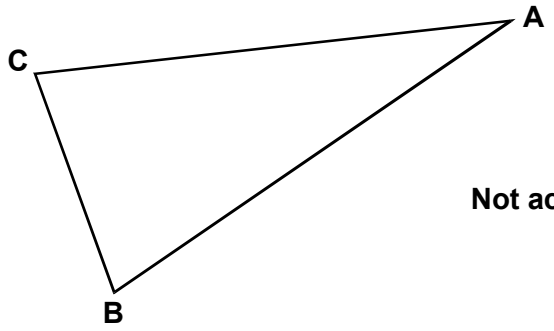
(b) $9 \div 2 + 1 \times 4 = 12$

5. An isosceles triangle has a perimeter of 12cm. One of its sides is 5cm. What could the length of each of the other two sides be?

Two different answers are possible. Give both answers.

	cm	and	cm
	cm	and	cm

6. Triangle ABC is isosceles and has a perimeter of 20 centimetres. Sides AB and AC are each twice as long as BC.



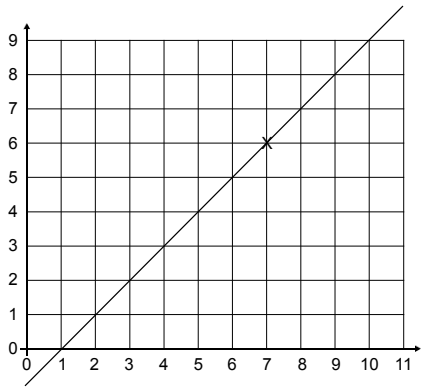
Not actual size

Calculate the length of the side BC.

Do not use a ruler.

Answer .....

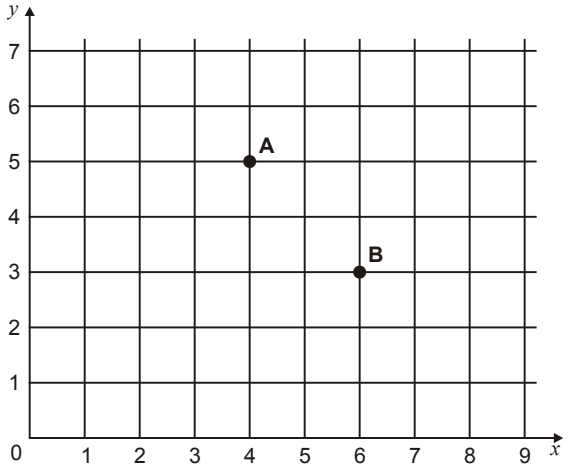
7. (7, 6) are coordinates of a point on the line.



Tick (✓) which of these are coordinates of other points on the line.

(3,2) ☐	**(9,10)** ☐	**(5,4)** ☐
(4,2) ☐	**(10,9)** ☐	**(7,9)** ☐

9. A, B, C and D are the vertices of a rectangle. A and B are shown on the grid.



D is the point (3, 4)

Write the coordinates of point **C.**

(,)

10. ***k*** stands for a whole number.

***k* + 7** is greater than 100

***k* – 7** is less than 90

Find **al**l the numbers that ***k*** could be.

Answer ……

11. In each sequence below, there is a rule for finding the next term.
Find the next *two* terms in each sequence by identifying the rule.

(a) 9, 4, -1, −6,

Answers ……., …….

(b) 8.4, 9.5, 10.6, 11.7,

Answers ……., …….

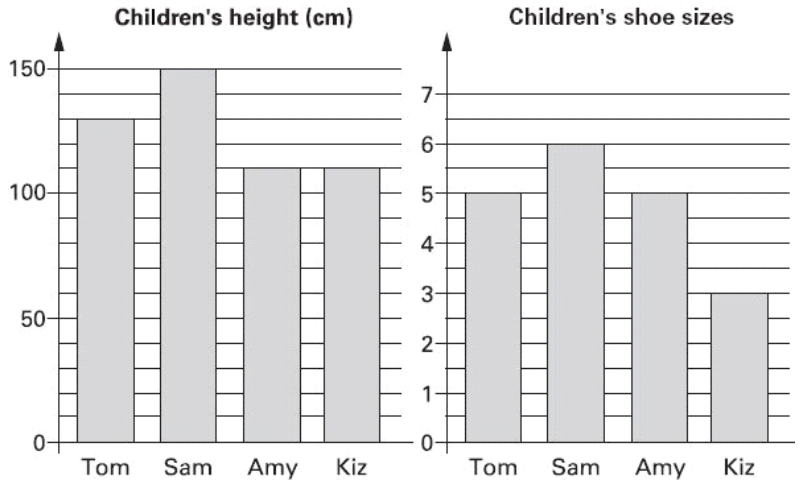
(c) 1, 4, 9, 16,

Answers ……., …….

(d) 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$,

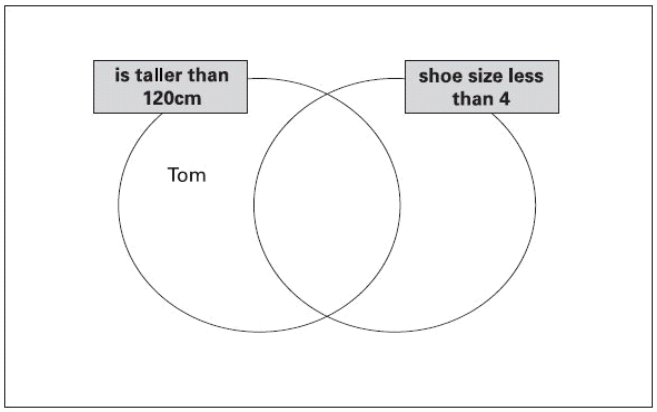
Answers ……., …….

12. These graphs show data about Tom, Sam, Amy and Kiz.



Use this data to write each child's name in the correct region on the diagram below.

One has been done for you.



13. Write the **two prime numbers** which multiply to make **219**

☐ × ☐ = **219**

14. Write the following numbers in order, starting with the lowest.

$$\frac{3}{5}, \quad -\frac{2}{5}, \quad \frac{8}{10}, \quad -\frac{4}{5}, \quad \frac{8}{5}$$

Answer ……, ……, ……, ……, ……

15. **n** stands for number.

Match the equivalent expressions by joining with a straight line.

n plus 5	n^2
	2 - n
2 less than n	n + 5
	2n
n plus n	n - 2

16.

(a) I think of a number, then subtract seven. The result is fourteen.
What was the original number?

Answer ……

(b) I think of a number, multiply it by two, then subtract five. The result is forty-five.
What was the original number?

Answer ……

(c) I think of a number, multiply it by 3, then add five. The result is minus one.
What was the original number?

Answer ……

17. A book usually costs £15.40 but it is reduced by 20%. How much does it cost now?

Answer ……

18. You have the numbers −5, −3, 0.5 and 7 available.
Any of these numbers can be used in each part of the question.

(a) What is the highest number that can be obtained by adding two of the above numbers?

Answer: ……

(b) What is the lowest number that can be obtained by adding two of the above numbers?

Answer: ……

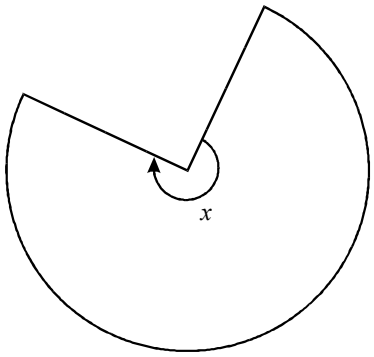
(c) What is the highest number that can be obtained by subtracting two of the above numbers?

Answer: ……

(d) What is the lowest number that can be obtained by multiplying two of the above numbers?

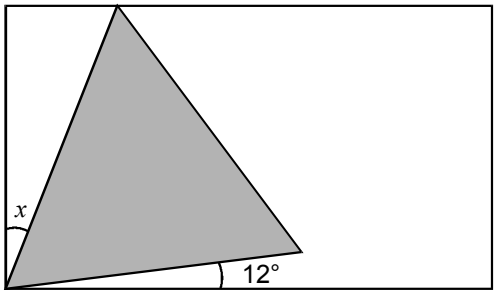
Answer: ……

19. This shape is **three-quarters of a circle**.



How many degrees is **angle *x***?

20. Here is an equilateral triangle inside a rectangle.



Not to scale

Calculate the value of angle ***x***.

Do **not** use a protractor (angle measurer).

Show your **method.** You may get a mark.

°

21. Calculate 3508 × 54 + 3508 × 44 + 7016 in the most efficient way possible

Answer: ……

22. There are 2.2 pounds in a kilogram





Mr Green sells apples at 40p per **kilogram.**

Mrs Ball sells apples at 24p per **pound.**

Work out who sells the cheaper apples.
Show how you worked it out.

.

Answer: ……

23. Sapna makes up a game using seven cards.

Here are the cards.



Josh picks a card without looking.

If Josh picks an **odd** number then Sapna scores a point.

If Josh picks an **even** number then Josh scores a point.

Is this a fair game?
Circle Yes or No.

Yes / No

Explain how you know.

.....

.....

The following section is multiple choice. Please circle the one correct answer. You can use the blank pages for working.

24. Which of the following statements is false?

A $3 + 5 \times 4 = 23$ B $20 - 5 \times 4 = 0$ C $12 - 5 \times 2 = 2$

D $3 + 6 \times 4 = 36$ E $5 \times 3 - 2 = 13$

25. The Pythagoras School of Music has 100 students. Of these, 60 are in the band and 20 are in the orchestra.

Given that 12 students are in both the band and the orchestra, how many are in neither the band nor the orchestra?

A 8 B 20 C 24 D 28 E 32

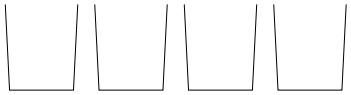
26. In the multiplication $\begin{array}{r} AB \\ \times\, C \\ \hline DE \end{array}$ each letter represents a different digit and only the digits 1, 2, 3, 4, 5 are used.

Which of the letters represents 2?

A B C D E

27. The diagram shows four empty glasses with their bases at the bottom. One move consists of turning exactly three of the four glasses upside-down.

What is the smallest number of moves needed before all of the glasses have their bases at the top?



A 3 B 4 C 7 D 11 E 13