



**OUNDLE**

School

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# EXAMINATION PAPER

## Junior Entry 2024

### Mathematics

**Time allowed: 1 hour**

**Name:** \_\_\_\_\_

#### Instructions

- Calculators are **NOT** allowed.
- Write **ALL** your working and answers on this paper. Show enough working on each question to make it clear how you reached your answer.
- Do not spend too long working on any particular question. Do not worry if you do not manage to complete every question.
- You may work in pen or pencil.

**Question 1**

- (a) Angela has a cookie weighing 12.3g. After taking a bite she weighs the cookie again, and it now weighs 9.47g. What was the weight of the bite of cookie Alice took?

Answer .....

- (b) A school buys 27 boxes of exercise books, each containing 25 exercise books. After each pupil in the school has received one exercise book there are 21 books remaining.

How many pupils are there in the school?

Answer .....

- (c) Chris works as a waiter with 6 other people. They share the tips fairly after each shift. If the tip jar contains £104.16 at the end of a shift, how much does Chris get?

Answer .....

- (d) Each month Daniel spends £674.58 on his mortgage and £197.76 on energy bills. How much are these two expenses combined?

Answer .....

**Question 2** Work out the following, obeying the correct order of operations.

(a)  $8 + 7 - 6 + 5$

Answer .....

(b)  $2 + 3 - 4 \times 5$

Answer .....

(c)  $1 + 2 \times 3^2$

Answer .....

(d)  $12 - (3 - 4) \times 5$

Answer .....

(e)  $1 - (23 - 4 \times 5)$

Answer .....

(f)  $20 \div (2 - 4) + 202 \times 4$

Answer .....

**Question 3** Insert one or more pairs of brackets to make the following statements correct:

(a)  $4 + 3^2 + 1 \div 5 = 6$

(b)  $4 + 3^2 + 1 \div 5 = 10$

**Question 4** Using the fact that  $34 \times 432 = 14688$ , write down the missing number in each part.

(a)  $34 \times 43.2 = ?$

Answer .....

(b)  $? \times 4.32 = 14.688$

Answer .....

(c)  $146.88 \div ? = 3400$

Answer .....

(d)  $170 \times 432 = ?$

Answer .....

(e)  $14688 \div ? = 17$

Answer .....

**Question 5** You have the numbers  $-6$ ,  $4$ ,  $5$  and  $-12$  available. Any of these numbers can be used in **each** part of the question, but only once per part.

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

Answer .....

(b) What is the greatest number that can be obtained by subtracting one number from another?

Answer .....

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

Answer .....

(d) By replacing the missing numbers, what is the greatest value of this calculation

$$(? - ?) \times ?$$

Answer .....

**Question 6**

(a) Which fraction is bigger,  $\frac{3}{8}$  or  $\frac{4}{11}$ ?

Answer .....

(b) Write down a fraction which is greater than  $\frac{5}{13}$ , but less than  $\frac{6}{13}$ .

Answer .....

(c) Calculate  $\frac{2}{7} + \frac{4}{21}$ .

Answer .....

(d) Calculate  $\frac{5}{8} \times \frac{16}{25}$ , remembering to simplify your answer.

Answer .....

(e) What is the result if  $1\frac{2}{3}$  is taken from  $3\frac{1}{3}$ ?

Answer .....

**Question 7**

*In this question you may use the grid below to help you answer the questions.*

A straight line passes through the points (4,3) and (12,19).

(a) (i) The point (11,  $a$ ) also lies on the line. Calculate the value of  $a$ .

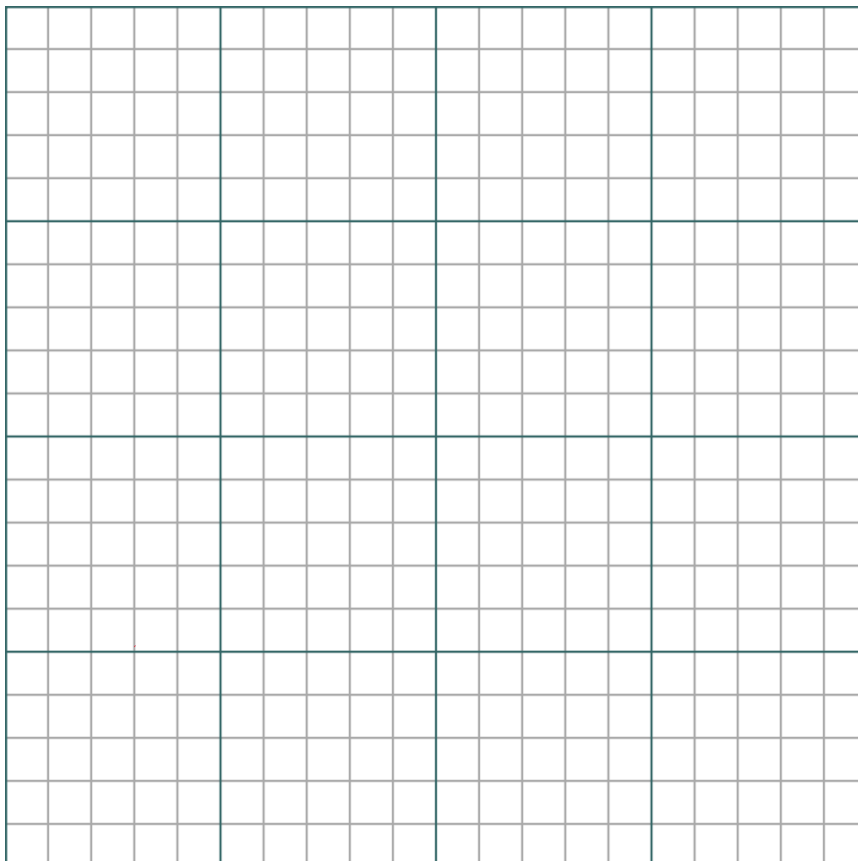
Answer .....

(ii) The point ( $b$ , 9) also lies on the line. Calculate the value of  $b$ .

Answer .....

(b) Another point (4,11) forms a triangle with (4,3) and (12,19). Find the area of the triangle.

Answer .....



**Question 8**

If it takes six horses three days to eat a bag of oats, how long will it take four horses to eat two bags of oats?

Answer .....

**Question 9**

James buys a six-pack of cola cans for £5 and sells them to his friends at 90p each. What is his percentage profit?

Answer .....

**Question 10**

A bag contains red, yellow, and green beads in the ratio 3: 2: 7. There are 24 more green beads than there are red beads. How many yellow beads are there?

Answer .....

**Question 11**

$m$  and  $n$  are two *different, positive* whole numbers which make the following statement true

$$5m + 4n = 60$$

How many possible pairs of numbers make the statement above true?

Answer .....

**Question 12**

The symbol  $\otimes$  represents a mathematical operation between two numbers which works as follows:

*Subtract the sum of the two numbers from their product*

ie.  $5 \otimes 7 = 5 \times 7 - (5 + 7)$   
 $= 23$

For each part, write down the missing value

(a)  $4 \otimes 9 = ?$

Answer .....

(b)  $8 \otimes ? = 13$

Answer .....

(c)  $3 \otimes (4 \otimes 6) = ?$

Answer .....

(d)  $? \otimes (2 \otimes 5) = 17$

Answer .....