OUNDLE

School

EXAMINATION PAPER
Junior Entry 2022

Mathematics

Time allowed: 1 hour

Name: _____

Instructions

- Calculators are **NOT** allowed.

- Attempt all the questions.

- All working and answers must be shown on this paper. Marks will be given for demonstrating your method.

Question 1

(a) Andrew does his weekly grocery shop, which costs him £178.43. He stops in a cafe on the way home and buys a hot chocolate for £3.49 and a pastry for £1.25. How much has he spent in total?

Answer …………………

(b) Betty is making toast for a breakfast buffet at a large hotel. She has 27 loaves of bread, and each loaf is cut into 24 slices. How many slices of toast will this make?

Answer …………………

(c) Charlotte has collected 140 eggs from her chickens. She has 13 cartons which can hold 6 eggs each. How many more cartons will Charlotte need?

Answer …………………

(d) Dylan is looking to buy a new microwave. The one he wants costs £105.80 in a shop but is only £86.95 online. How much will he save by buying online?

Answer …………………

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

(a) $2 + 0 \times 22$

Answer ....

(b) $2 + 0 \times 2 - 2$

Answer ....

(c) $2 \times 0 \div 2 - 2$

Answer ....

(d) $2 - (0 - 2) \times 2$

Answer ....

(e) $2 + (0 - 2 \times 2)$

Answer ....

(f) $20 \div (2 + 2) + 20 \times 22$

Answer ....

Question 3

Insert brackets to make the following statements correct:

(a) $3 \times 3 + 3 - 3 = 15$

(b) $3 - 3 \div 3 + 3 \times 3 = 9$

Question 4

Given that 123 × 456 = 56088, write down the missing number in each part.

(a) 12.3 × ? = 56.088

Answer ....

(b) ? × 4.56 = 560880

Answer ....

(c) 560.88 ÷ ? = 12300

Answer ....

(d) 246 × 456 = ?

Answer ....

(e) 56088 ÷ ? = 369

Answer ....

Question 5

You have the numbers −5, 3, 11 and −6 available.

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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 two of the above numbers?

Answer ....

(c) What is the least number that can be obtained by multiplying 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, $\frac{4}{7}$ or $\frac{6}{11}$?

Answer ....

(b) Write down a fraction which is greater than $\frac{2}{11}$, but less than $\frac{3}{11}$.

Answer ....

(c) Calculate $\frac{2}{5} + \frac{3}{10}$.

Answer ....

(d) Calculate $\frac{3}{5} \times \frac{10}{21}$, remembering to simplify your answer.

Answer ....

(e) What is the result if $2\frac{1}{3}$ is taken from 4 ?

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 (2, 1) and (8, 13).

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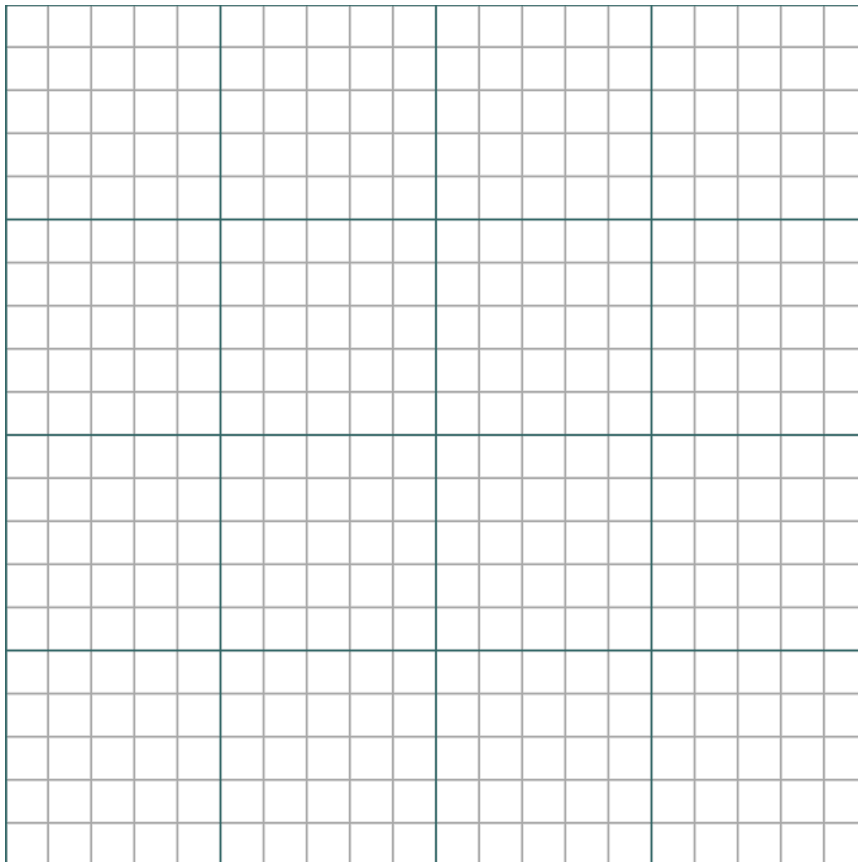(a) (i) The point (5, *a*) also lies on the line. Calculate the value of *a*.

Answer ………………..

(ii) The point (*b*, 19) also lies on the line. Calculate the value of *b*.

Answer ………………..

(b) Another point (2, 10) forms a triangle with (2,1) and (8,13). Find the area of the triangle.

Answer ………………..

Question 8
If it takes 3 dogs 5 hours to dig 12 holes, how many identical holes could 4 dogs dig in the same time?

Question 9

A shop sells cupcakes for £2.50 each. If you buy more than five cupcakes, the shop reduces the price to £2 for the additional cupcakes (but still full price for the first five). If you bought 20 cupcakes, what percentage saving would you have made?

Answer …………………

Question 10

A school enters its pupils from Years 7 and 8 for a maths competition, in the ratio 2:5. There are 36 more Year 8s than Year 7s. How many pupils were entered in total?

Answer …………………

Question 11

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

$$5m + 6n = 120$$

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

Answer …………………

Question 12

The symbol ⊕ represents a mathematical operation which works as follows: find the sum of the two numbers and divide by their product, leaving you answer as a fraction (which may be simplified).

ie. $5 \circledS 7 = \frac{5+7}{5\times7}$

$= \frac{12}{35}$

For each part, write down the missing value.

(a) $4 \circledS 9 = ?$

Answer ....

(b) $7 \circledS ? = \frac{15}{56}$

Answer ....

(c) $? \circledS 6 = \frac{1}{2}$

Answer ....

(d) Find a pair of positive whole numbers, a and b, for which:

(i) $a \circledS b = 1$

Answer ....

(ii) $a \circledS b - \frac{a}{b} = 0$

Answer ....