Name:

OUNDLE
School

2017 Junior Entrance Examination
Second Form Entry

Mathematics

Time Allowed: 60 minutes

- 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.
- Calculators are ***NOT*** permitted.

Question 1

(a) It is 4367 km between towns A and B. It is 8694 km between towns B and C.
Calculate the total distance travelled if I go from A to B and then to C.

Answer …….

(b) Each container ship can carry 430 containers. If each container can hold 67 washing machines, what is the total number of washing machines that can be carried on one container ship?

Answer …….

(c) There are 4005 apples that need to be packed into boxes. If each box holds 13 apples, how any boxes are needed?

Answer …….

(d) Tax is charged at the rate of 17% on business profits. If a business makes profits of £45,330 one year, how much tax must be paid?

Answer …….

(e) Subtract three fifths from four sevenths.

Answer …….

(f) Calculate two and one third multiplied by one and three sevenths.

Answer …….

Question 2

Calculate each of the following

(a) $1 - 2 - 3 - 4$

Answer …….

(b) $5 + 3 \div 2 - 1$

Answer …….

(c) $4 - (3 - (2 - 1))$

Answer …….

Question 3

If $x = 3$, $y = -7$ and $z = -9$, find the value of

(a) $x + y - z$

Answer …….

(b) xy

Answer …….

(c) $-3y^2$

Answer …….

(d) $2yz - x^3$

Answer …….

Question 4

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

Answer .....

(b) I think of a number, multiply it by six, then subtract nine. The result is thirty-three.
What was the original number?

Answer .....

(c) I think of a number, double it, then add fifteen. The result is three.
What was the original number?

Answer .....

Question 5

The six angles of two different triangles are listed in decreasing order. The list starts 115°, 85°, 75° and 35°.
What is the last angle in the list? Explain your answer.
Hint: Remember that the angles inside any triangle always add up to 180 degrees.

Answer .....

Question 6

In a group of 48 children, the ratio of boys to girls is 3 : 5.
How many boys must join the group to make the ratio of boys to girls 5 : 3?

Answer …….

Question 7

The area of a square is 0.25 m^2. What is the perimeter of the square, in metres?

Answer …….

Question 8

Ahmed chooses two different items for a snack. His choices are an apple, an orange, a banana, and a granola bar. How many different pairs of snacks could he choose?

Answer ……

Question 9

Sophia did push-ups every day for 7 days. Each day after the first day, she did 5 more push-ups than the day before. In total she did 175 push-ups. How many push-ups did Sophia do on the last day?

Answer ……

Question 10

The mean (average) of a set of six numbers is 10. The number 25 is removed from the set.
Calculate the mean of the remaining numbers.

Answer ……

Question 11

(a) What is 417 minutes in hours and minutes?

Answer …….

(b) Change 7.8 hours into minutes.

Answer …….

(c) The time is 20:14. What is the smaller angle between the hour hand and the minute hand on an accurate analogue clock?

Answer …….

(d) A short time after 1:50, the hour and minute hands are both the same angle away from 12 o'clock. What is the exact time when this occurs?

Answer …….