Name:

OUNDLE
School

2018 Junior Entrance Examination
Second Form Entry

Mathematics

Time Allowed: **60 minutes**

Instructions

- Calculators are ***not*** permitted.
- 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) The length of race track A is 3420.4 metres.
The length of race track B is 74539.7 metres.
If a car travelled once around each race track, how far would it have travelled, in metres?

Answer ……. [1]

(b) A lorry can carry 68 boxes, and each box contains 22 books.
How many books can the lorry carry?

Answer ……. [1]

(c) 2341 litres of water need to be carried in containers that are 21 litres.
How many containers will be needed?

Answer ……. [2]

(d) Interest is earned at a rate of 13% per year.
How much interest is earned on a starting balance of £3058, deposited for one year?

Answer ……. [2]

(e) Subtract three sevenths from five sixths.

Answer ……. [2]

Question 2

Calculate each of the following

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

Answer …….. [1]

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

Answer …….. [2]

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

Answer …….. [2]

Question 3

If $x = -2$, $y = 3$ and $z = -1$, find the value of

(a) $x + y - z$

Answer …….. [2]

(b) xz

Answer …….. [2]

(c) $-3x^2$

Answer …….. [2]

(d) $2xy - z^3$

Answer …….. [2]

Question 4

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

Answer …… [2]

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

Answer …… [2]

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

Answer …… [2]

Question 5 Solve the following equations, giving your answers as whole numbers or fractions.

(a) $3x - 7 = 5x + 7$

Answer …… [2]

(b) $\frac{1}{2}x - 3 = \frac{x}{3} + 5$

Answer …… [2]

Question 6

In a class the ratio of boys to girls is 3 : 5.
If there are 6 less boys than girls, how any pupils are in the class in total?

Answer ……. [2]

Question 7

The perimeter of a rectangle is 14 cm.
If the length of the rectangle is 2 cm longer than the width, calculate the **area** of the rectangle.

Answer ……. [2]

Question 8

How many 4 digit numbers greater than 2000 can be formed using the digits 1, 2, 3 and 4?
Each digit can be used only once.

Answer ……. [3]

Question 9

John picked strawberries every day for 7 days. Each day after the first day, he picked 5 more strawberries than the day before. In total he picked 175 strawberries. How many strawberries did John pick on the last day?

Answer ……. [3]

Question 10

The mean (average) of a set of six numbers is 10. The number 17 is added to the set of numbers.
Calculate the mean of the new set.

Answer …….. [3]

Question 11

(a) What is 327 minutes in hours and minutes?

Answer ……. [2]

(b) Change 5.2 hours into minutes.

Answer ……. [2]

(c) The time is 08:26. What is the smaller angle between the hour hand and the minute hand on an accurate analogue clock?

Answer ……. [3]