NAME:_____   TEACHER: _____

Answer ALL the questions.

You may use a calculator.

Show the working out where necessary.

Time allowed 50 minutes.

- -

1.

A ferry to Crete leaves at 07 30.
The journey takes 2 hours and 48 minutes.
Work out the time when the ferry arrives in Crete.

Answer .... [1]

2.

(a) Write the following in order, starting with the smallest.

$$0.43 \qquad \frac{4}{9} \qquad 41\%$$

Answer(a) .... < .... < .... [1]

3.

Write down the value of

(a) 10^{-2},

Answer(a) .... [1]

(b) 4^{0},

Answer(b) .... [1]

(c) $\sqrt[3]{343}$.

Answer(c) .... [1]

4.

(a) Find the lowest common multiple of 7 and 9.

Answer(a) .... [1]

(b) Without using a calculator, work out $\dfrac{8}{9} - \dfrac{5}{7}$, leaving your answer as a fraction.

You must show all your working.

Answer(b) .... [2]

5.

The number of spectators, N, at a football match is $16\,000$, correct to the nearest thousand.
Complete the statement for N in the answer space.

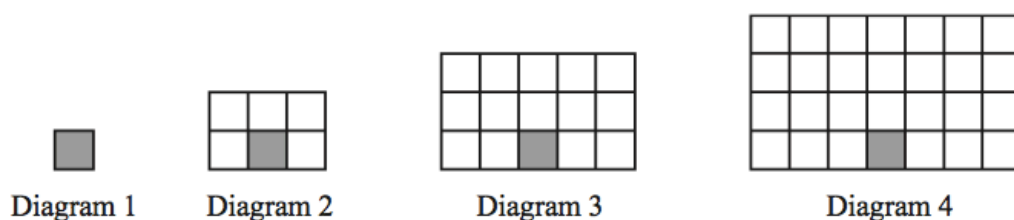*Answer* .... $\leqslant N <$ .... [2]

6.

(a) Calculate $\dfrac{0.0763}{1.85 + 4.7 \times 8}$.

Answer(a) .... [1]

(b) Write 0.0763 in standard form.

Answer(b) .... [1]

7.

Diagram 1   Diagram 2   Diagram 3   Diagram 4

Look at the sequence of diagrams.

(a) Diagram 2 has a height of 2.

Write down the height of

(i) Diagram 5,

Answer(a)(i) .... [1]

(ii) Diagram 10,

Answer(a)(ii) .... [1]

(iii) Diagram n.

Answer(a)(iii) .... [1]

(b) Diagram 2 has a width of 3.

Find the width of

(i) Diagram 5,

Answer(b)(i) .... [1]

(ii) Diagram 10,

Answer(b)(ii) .... [1]

(iii) Diagram n.

Answer(b)(iii) .... [2]

(c) There are 6 squares in Diagram 2 and 15 squares in Diagram 3.

(i) Write down how many squares there are in Diagram 5.

Answer(c)(i) .... [1]

(ii) Explain how this is found from the height and width of the diagram.

Answer(c)(ii) .... [1]

(iii) Write down, in terms of n, how many squares there are in Diagram n.

Answer(c)(iii) .... [1]

8.

$$4 \qquad \sqrt{8} \qquad \sqrt{25} \qquad \frac{5}{2} \qquad 0.3333$$

From the list above, write down

(a) a prime number,

Answer(a) .... [1]

(b) an irrational number.

Answer(b) .... [1]

9.

$$< \qquad = \qquad >$$

For each part, choose a symbol from those above to make a correct statement.

(a) $\dfrac{5}{9}$ .... 0.55 [1]

(b) 66% .... $\dfrac{2}{3}$ [1]

10.

(a) Write down in figures the number twenty thousand three hundred and seventy six.

Answer(a) .... [1]

(b) Write your answer to **part (a)** correct to the nearest hundred.

Answer(b) .... [1]

11.

Without using your calculator, and leaving your answer as a fraction, work out

$$2\frac{1}{6} - \frac{7}{12}.$$

You must show all your working.

Answer .... [3]

12.

(a) Write 1738.279 correct to 1 decimal place.

Answer(a) .... [1]

(b) Write 28 700 in standard form.

Answer(b) .... [1]

13.

(a) The table shows part of a railway timetable.

Peartree Station	arrival time	1258	1356	1454	1552
	departure time	1307	1405	1503	1601

(i) Each train waits the same number of minutes at Peartree Station.

Write down how many minutes each train waits.

Answer(a)(i) .... min [1]

(ii) Janine is at Peartree Station at 3 pm.

At what time does the next train depart?

Answer(a)(ii) .... [1]

(b) The average temperature each month in Moscow and Helsinki is recorded.
The table shows this information from January to June.

	January	February	March	April	May	June
Temperature in Moscow (°C)	−16	−14	−8	1	8	11
Temperature in Helsinki (°C)	−9	−10	−7	−1	4	10

(i) Find the difference in temperature between Moscow and Helsinki in **January**.

Answer(b)(i) .... °C [1]

(ii) Find the increase in temperature in Helsinki from March to June.

Answer(b)(ii) .... °C [1]

14.

One square number between 50 and 100 is also a cube number.

Write down this number.

Answer .... [1]

15.

Ingrid throws a javelin a distance of 58.3 metres, correct to 1 decimal place.

Complete the statement about the distance, d metres, the javelin is thrown.

Answer .... $\leqslant d <$ .... [2]

16.

Show that $\qquad 1\dfrac{5}{9} \div 1\dfrac{7}{9} = \dfrac{7}{8}$.

Write down all the steps in your working.

Answer

[2]

17.

(a) Rewrite this calculation with all the numbers rounded to 1 significant figure.

$$\frac{77.8}{21.9 - 3.8 \times 4.3}$$

Answer(a) [1]

(b) Use your answer to **part (a)** to work out an estimate for the calculation.

Answer(b) .... [1]

(c) Use your calculator to find the **actual** answer to the calculation in **part (a)**.
Give your answer correct to 1 decimal place.

Answer(c) .... [2]

18.

(a) Complete the list to show all the factors of 18.

1,   2, ... , ... , ... ,   18   [2]

(b) Write down the prime factors of 18.

Answer(b) .... [1]

(c) Write down all the multiples of 18 between 50 and 100.

Answer(c) .... [1]