

SNHS – MATHEMATICS
Core Maths Transition Work

Hand in on your first lesson

Name:

Questions

Q1.

Here are the first four terms of an arithmetic sequence.

5

9

13

17

(a) What is the next term of this sequence?

.....

(1)

(b) Write down an expression, in terms of n , for the n th term of the sequence.

.....

(2)

(Total for Question is 3 marks)

Q2.

$$-2 < n \leq 3$$

n is an integer.

(a) Write down all the possible values of n .

.....

(2)

$$3x + 5 > 16$$

x is an integer.

(b) Find the smallest value of x .

.....

(3)

(Total for Question is 5 marks)

Q3.

3 kg of potatoes and 4 kg of carrots have a total cost of 440p.
4 kg of potatoes and 3 kg of carrots have a total cost of 470p.

Work out the total cost of 1 kg of potatoes and 1 kg of carrots.

..... p

(Total for question = 4 marks)

Q4.

The Singh family and the Peterson family go to the cinema.

The Singh family buy 2 adult tickets and 3 child tickets.
They pay £28.20 for the tickets.

The Peterson family buy 3 adult tickets and 5 child tickets.
They pay £44.75 for the tickets.

Find the cost of each adult ticket and each child ticket.

(Total for question = 5 marks)

Q5.

A set of tyres normally costs £500
In a sale there is a 30% discount.

Work out the sale price of the set of tyres.

£.....

(Total for Question is 3 marks)

Q6.

Charlie invests £1200 at 3.5% per annum compound interest.

Work out the value of Charlie's investment after 3 years.

£.....

(Total for Question is 3 marks)

Q7.

A ticket to a theme park costs £35 plus 20% VAT.

Work out the total cost of the ticket.

.....
(Total for Question is 3 marks)

Q8.

During a 10 year period, the number of people living in Sherbury increased by 5% to 20 265

In the same period, the number of people living in Yaston increased by 7.5% to 13 502

Compare the increase in the number of people living in Sherbury with the increase in the number of people living in Yaston during this 10 year period.

(Total for question = 3 marks)

Q9.

In a sale normal prices are reduced by 20%.

A washing machine has a sale price of £464

By how much money is the normal price of the washing machine reduced?

£

(Total for Question is 3 marks)

Q10.

There are 72 guests staying in a hotel.
They are French or German or Spanish.

The two-way table shows some information about the guests.

	French	German	Spanish	Total
Female	17		14	40
Male		13		32
Total	29		21	72

(a) Complete the two-way table.

(2)

One of these guests is picked at random.

(b) Write down the probability that the guest is female.

.....
(1)

One of the male guests is picked at random.

(c) Write down the probability that this male guest is German.

.....
(1)

(Total for Question is 4 marks)

Q11.

The table shows information about the numbers of Year 10 students absent from Ellen's school last week.

	Monday	Tuesday	Wednesday	Thursday	Friday
Number of students	12	6	7	10	13

(a) Work out the mean number of Year 10 students absent each day.

.....
(2)

Ellen's school has a total of 240 Year 10 students.

(b) What percentage of Year 10 students were absent on Monday?

..... %
(2)

(Total for question = 4 marks)

Q12.

The table gives information about the heights of 50 trees.

Height (h metres)	Frequency
$0 < h \leq 4$	8
$4 < h \leq 8$	21
$8 < h \leq 12$	12
$12 < h \leq 16$	7
$16 < h \leq 20$	2

Work out an estimate for the mean height of the trees.

..... m

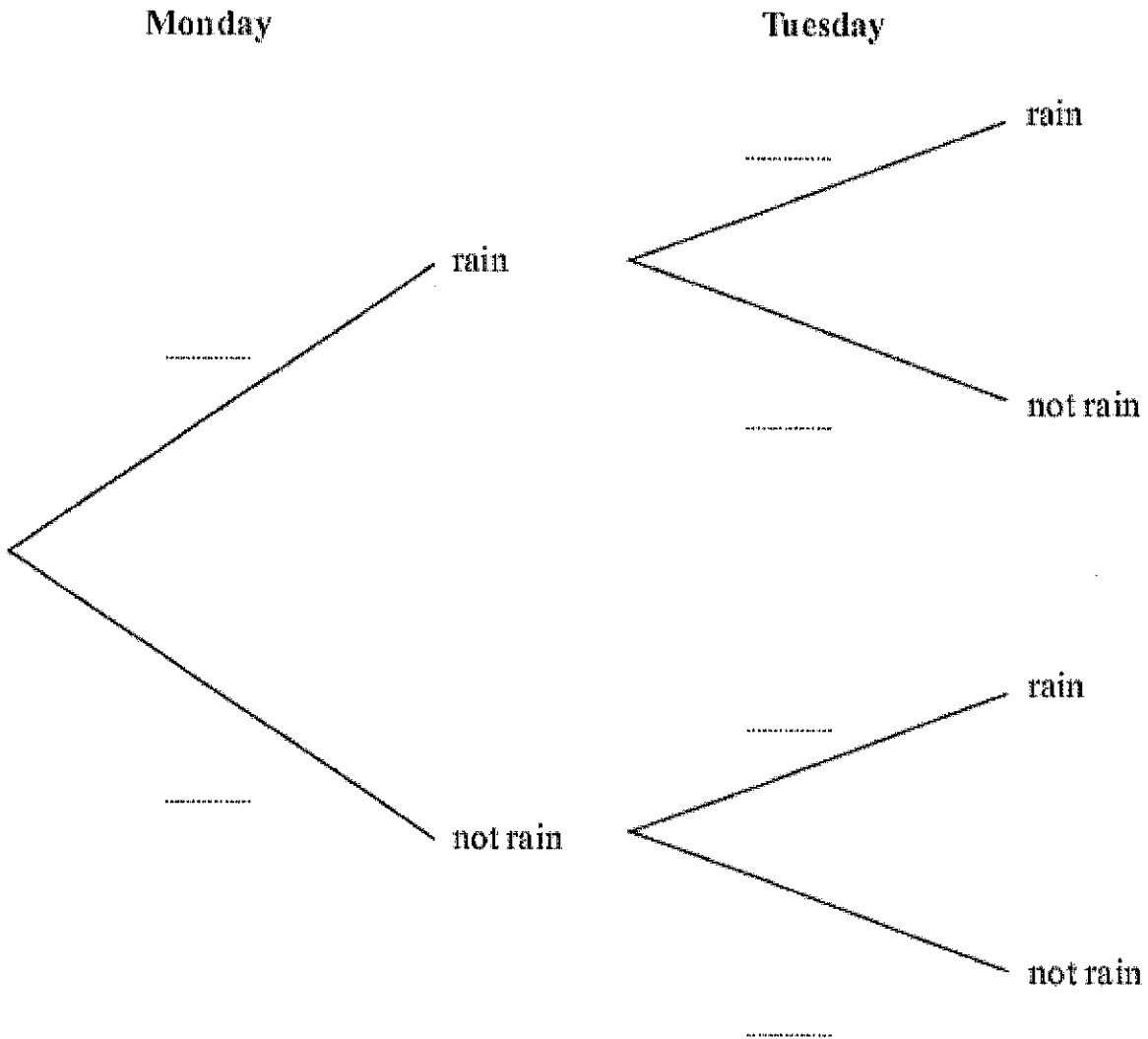
(Total for question = 4 marks)

Q13.

The probability that it will rain on Monday is 0.6

When it rains on Monday, the probability that it will rain on Tuesday is 0.8

When it does **not** rain on Monday, the probability that it will rain on Tuesday is 0.5



(a) Complete the probability tree diagram.

(2)

(b) Work out the probability that it will rain on both Monday and Tuesday.

.....

(2)

(c) Work out the probability that it will rain on at least one of the two days.

.....

(3)

(Total for Question is 7 marks)

Q14.

There are only blue counters, green counters, red counters and yellow counters in a bag. Olga is going to take at random a counter from the bag.

The table shows the probability that Olga will take a blue counter and the probability that she will take a yellow counter.

Colour	blue	green	red	yellow
Probability	0.4			0.15

The number of red counters in the bag is 4 times the number of green counters in the bag.

Complete the table.

(Total for question = 3 marks)