End of Half Term Assessment 2

Name: _____

Class: _____

Date: _____

Time: **64 minutes**

Marks: **60 marks**

Comments:

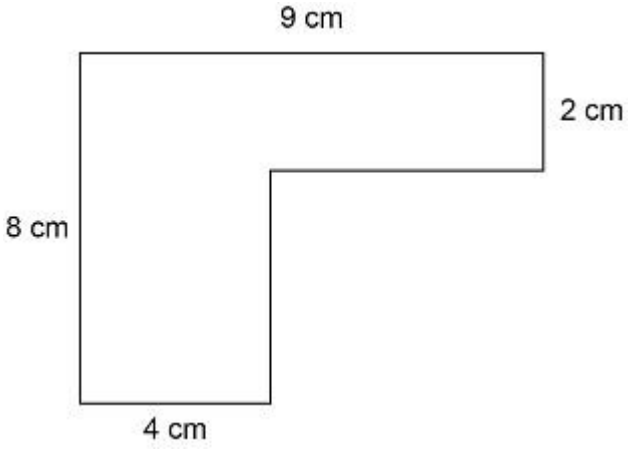
Targets:

2D Shapes	
3D Shapes	
Angles	
Angles in Polygons	
Probability	
Averages	
Indices	
Standard Form	
Compound Interest	
Sequences	
Pythagoras Theorem	
Frequency Tree	
Probability Tree	
Venn Diagram	

Q1.

Here is a shape made from rectangles.

Not drawn accurately

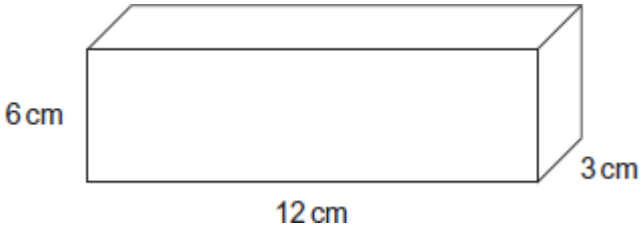


Work out the area.

Answer _____ cm^2

(Total 3 marks)

Q2.



(a) Calculate the volume of the cuboid.

State the units of your answer.

Answer _____

(3)

(b) A cube has a surface area of 54 cm^2.

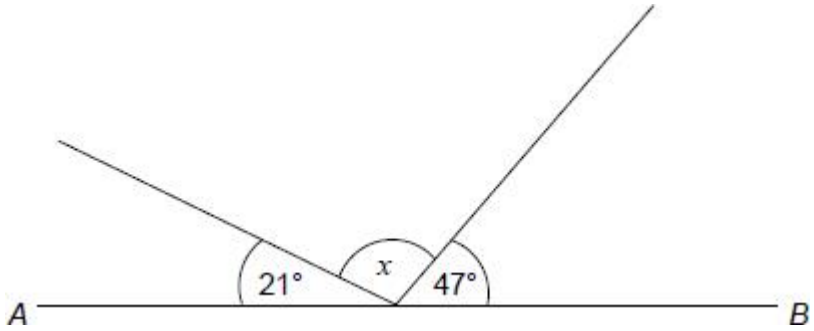
How many of these cubes will fit inside the cuboid?

Answer _____

(4)

(Total 7 marks)

Q3.



Not drawn accurately

AB is a straight line.

Work out the size of angle x

_____

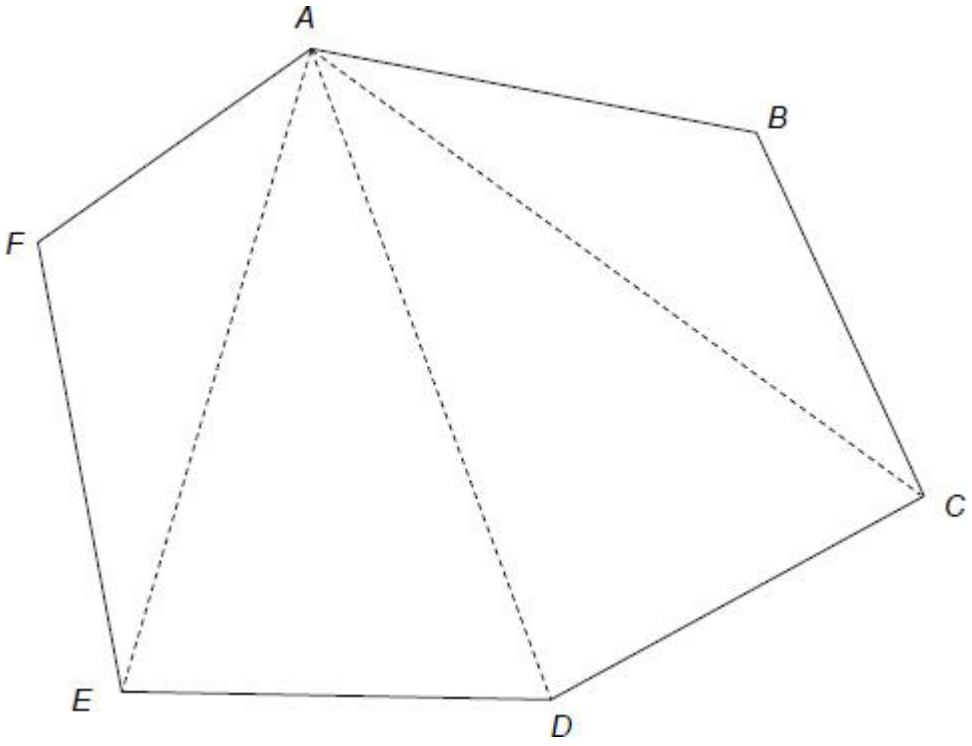
_____

x = _____ °

(Total 2 marks)

Q4.

Polygon *ABCDEF* is divided into triangles as shown.



Use the triangles to work out the sum of the interior angles of polygon *ABCDEF*.
You **must** show your working.

Answer _____ °

(Total 2 marks)

Q5.

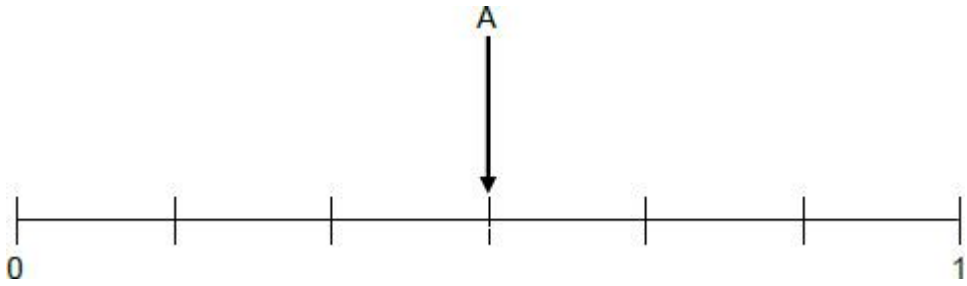
Here are three events for an ordinary fair dice.

A Roll an odd number

B Roll a number greater than 6

C Roll a 3

Draw and label arrows to show the probabilities of events B and C on the probability scale.



(Total 2 marks)

Q6.

(a) An ordinary fair dice is thrown.

Work out the probability of getting a 4 or a 5

Answer _____

(2)

(b) Work out the probability of **not** getting a 2

Answer _____

(1)

(Total 3 marks)

Q7.

A school play takes place each day from Monday to Friday.

Here are the attendances on four of the days.

Monday	Tuesday	Wednesday	Thursday
72	83	88	97

For all **five** days, the mean attendance is 90

Work out the attendance on Friday.

Answer _____

(Total 3 marks)

Q8.

Here is a list of numbers

7 4 9 10 4 3 5 8

(a) Write down the mode.

Answer _____

(1)

(b) Work out the mean.

_____

_____

_____

Answer _____

(2)

(Total 3 marks)

Q9.

Write $(3^6 \times 3^5) : 3^7$ in the form $n : 1$ where n is an integer.

Answer _____ : 1

(Total 3 marks)

Q10.

Write 61.6×10^3 in standard form.

Answer _____

(Total 1 mark)

Q11.

Write these numbers in ascending order.

9812 9.82×10^2 9.81×10^3

Answer _____ _____ _____

(Total 2 marks)

Q12.

The value of a second-hand car is £9000

Each year it loses 20% of its value at the start of that year.

Work out its value in four years time.

Answer £ _____

(Total 3 marks)

Q13.

£6000 is invested at 2.5% compound interest.

(a) Show that the value of the investment after 2 years is £6303.75

(2)

(b) In the third year the interest rate falls to 2.4%
In the fourth year the interest rate falls to 2.35%

Will the interest for year 4 be more or less than the interest for year 3?
Tick a box.

More ☐ Less ☐

You **must** show your working.

(4)

(Total 6 marks)

Q14.

A linear sequence starts

11 21 31 41 ...

Work out an expression for the *n*th term of the sequence.

_____

_____

_____

_____

Answer _____

(Total 2 marks)

Q15.

A is an **arithmetic** progression.

Here are the first four terms.

13 16 19 22

G is a **geometric** progression.

Here are the first four terms.

2 4 8 16

*n*th term of A = 8th term of G

Work out the value of *n*.

_____

_____

_____

_____

_____

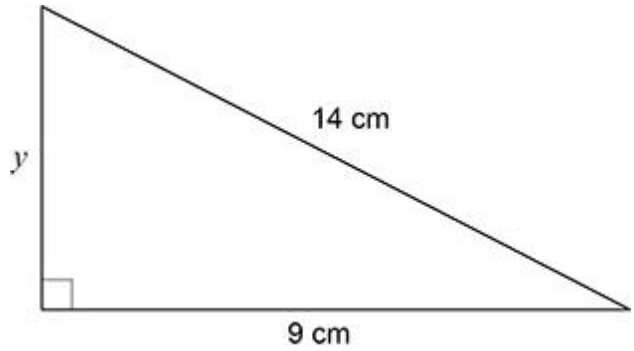
_____

n = _____

(Total 4 marks)

Q16.

Here is a triangle.



Not drawn accurately

Use Pythagoras' theorem to work out the value of y.

Give your answer as a decimal.

y = _____ cm

(Total 3 marks)

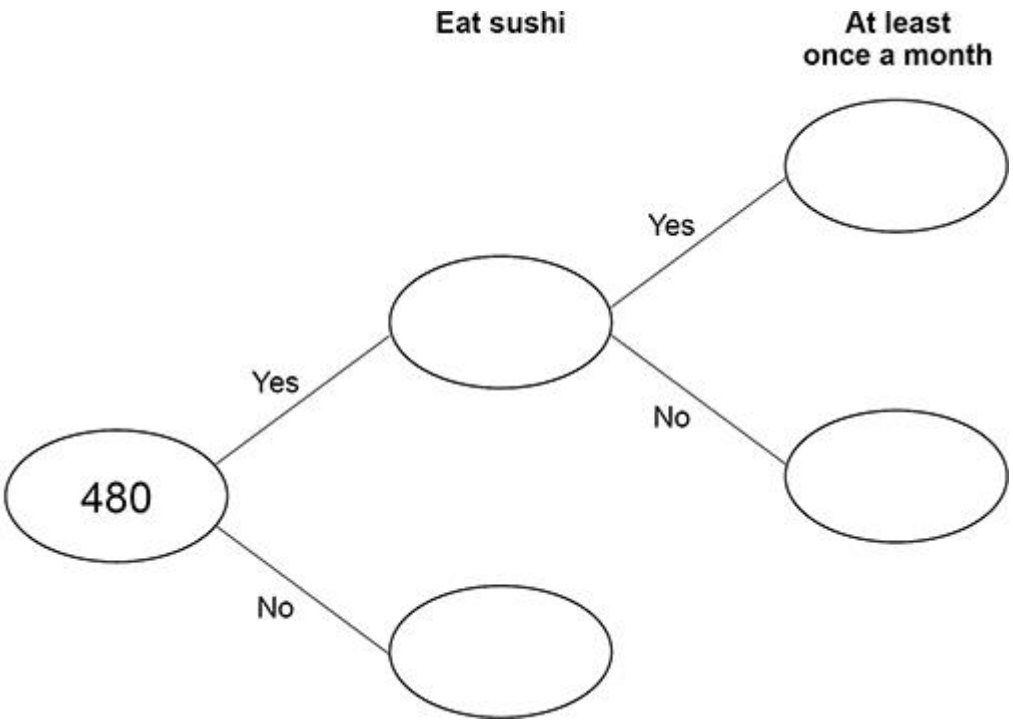
Q17.

480 people are asked if they eat sushi.

20% say Yes.

$\frac{2}{3}$ of the people who say Yes eat sushi at least once a month.

Complete the frequency tree.

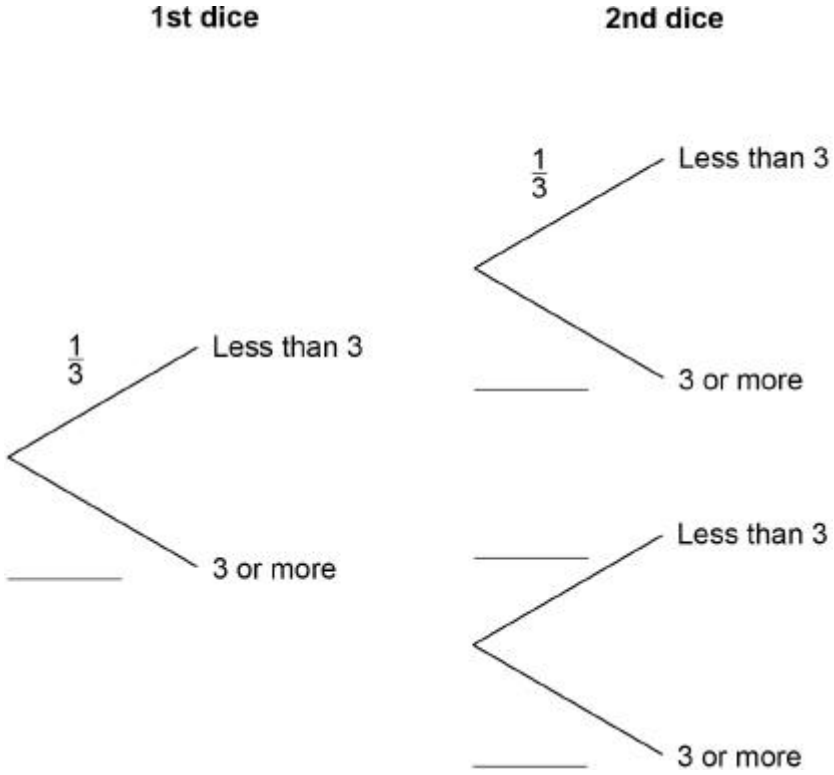


(Total 4 marks)

Q18.

Two ordinary fair dice are rolled.

(a) Complete the tree diagram.



(1)

(b) Work out the probability that **both** dice land on a number less than 3

_____

_____

Answer _____

(1)

(Total 2 marks)

Q19.

At a country park there is a house, a museum and a garden.

The table shows the prices per person to visit the park.

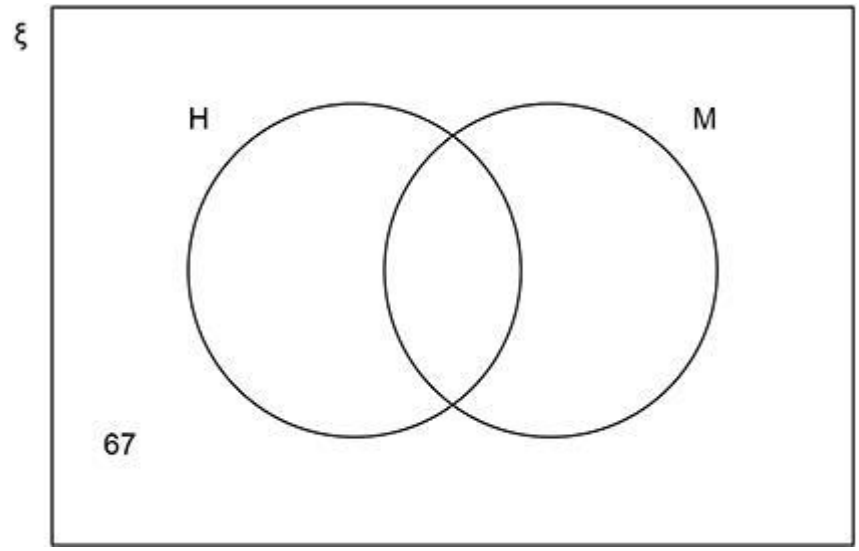
	Price per person
Garden only	Free
House and museum	£12.50
House only	£8
Museum only	£7

One day, 480 people visit the park.

67 visit the garden **only**.
40% visit the house **and** the museum.
$\frac{3}{8}$ visit the house **only**.
The rest visit the museum **only**.

In total, how much do the 480 people pay to visit the park?

You may use the Venn diagram to help you.



Answer £ _____

(Total 5 marks)