1st Class Maths

PREDICTED PAPER

Video Solutions

Candidate Surname	Other names

Centre Number	Candidate Number

Tuesday 7 June 2022

Morning (Time: 1 hours 30 minutes)

Mathematics

Paper 2 (Calculator)

Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pairs of compasses, pen, HB pencil, eraser. Tracing paper may be used.

Total Marks

Student Self Reflection

Topics I need to ***revise***

Topics I need to ***learn***

Silly Mistakes?

Target mark for next time

Answer ALL questions

Write your answers in the spaces provided

You must write down all the stages in your working.

1 Write 3704 to the nearest 1000

.....

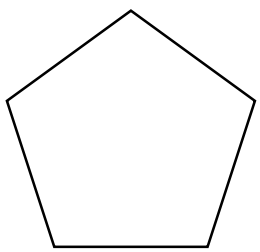
(Total for Question 1 is 1 mark)

2 Write 0.4 as a percentage

.....

(Total for Question 2 is 1 mark)

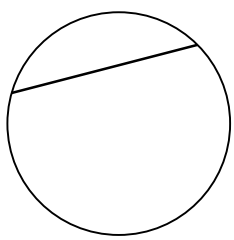
3 Write down the name of the regular polygon shown below.



.....

(Total for Question 3 is 1 mark)

4 Write down the mathematical name of the straight line that is shown on the circle below.



.....

(Total for Question 4 is 1 mark)

5 Write down a multiple of 4 that is between 30 and 39

.....

(Total for Question 5 is 1 mark)

6 (a) Write the following numbers in order of size.
Start with the smallest number.

–3 4 –5 2 0

.....

(1)

(b) Here are four fractions.

$\frac{2}{3}$ $\frac{7}{10}$ $\frac{3}{5}$ $\frac{13}{20}$

Write these fractions in order of size.
Start with the smallest fraction.

.....

(2)

(Total for Question 6 is 3 marks)

7 Here are three symbols.

<	>	=

Write one of these symbols in each box to make four true statements.

26 ☐ 20

-7 ☐ -4

3.2 ☐ 3.07

4^2 ☐ 8 + 8

(Total for Question 7 is 2 marks)

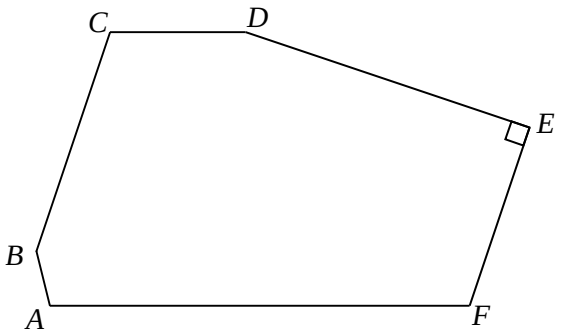
8 Sean spends 35 minutes revising for his exam.
Erica spends 1 hours 15 minutes revising for her exam.

Work out the total time, in minutes, spent revising by Sean and Erica.

..... minutes

(Total for Question 8 is 2 marks)

9



ABCDEF is a polygon.

Angle DEF = 90°

(a) Write down the line which is perpendicular to line EF.

.....

(1)

(b) Write down the line which is parallel line to EF.

.....

(1)

(Total for Question 9 is 2 marks)

10 A bag contains only red and green counters.
In total bag contains 48 counters, of which 20 are red.

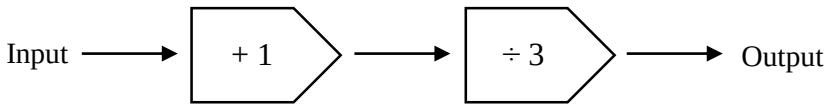
Write, as a ratio, the number of red counters to the number of green counters.
Give your answer in its simplest form.

.....

(Total for Question 10 is 2 marks)

Turn over ▶

11 The diagram shows a number machine.



(a) Find the output when the input is 11.

.....

(1)

(b) Find the input when the output is 7.

.....

(2)

(Total for Question 11 is 3 marks)

12 Here is some information about the ticket prices for a theatre.

Ticket prices
Adult: £20 Child: £7.50

The theatre has 380 seats.

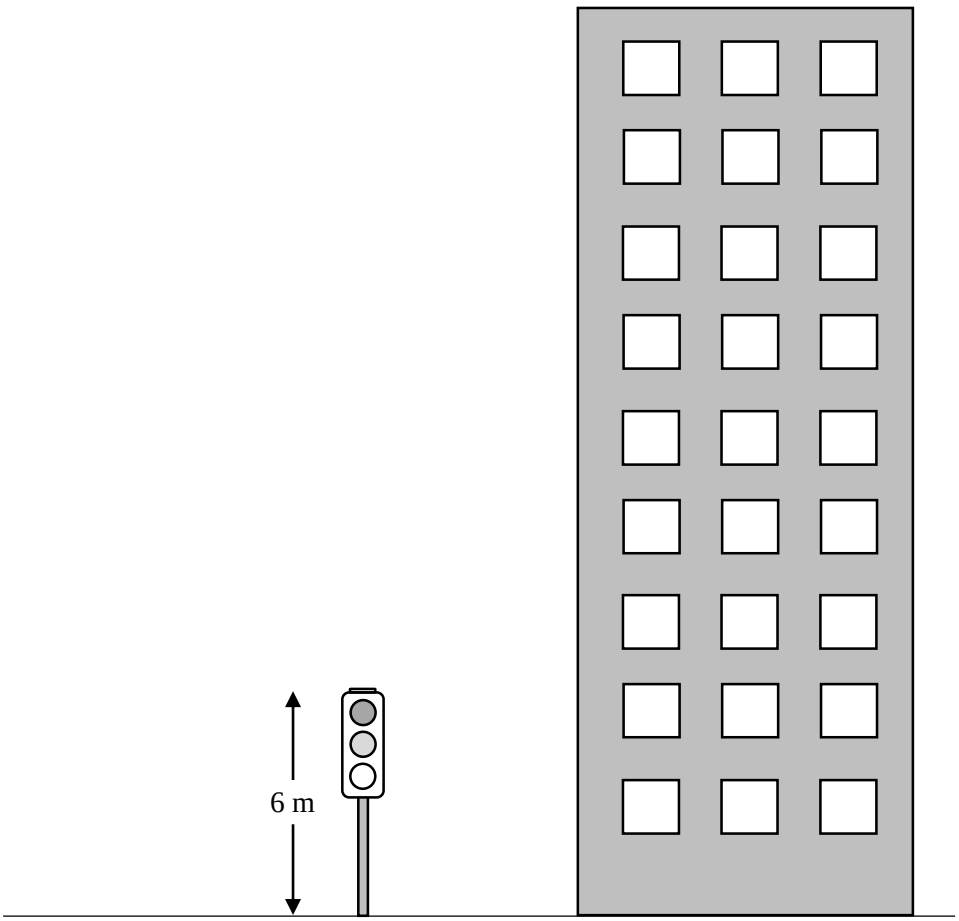
One night they sell tickets for all of the seats.
124 of the tickets are for adults.

Work out the total amount of money the theatre receives from ticket sales.

£.....

(Total for Question 12 is 3 marks)

13



The picture shows a traffic light next to a building.
The height of the traffic light is 6 m.

The traffic light and building are drawn to the same scale.

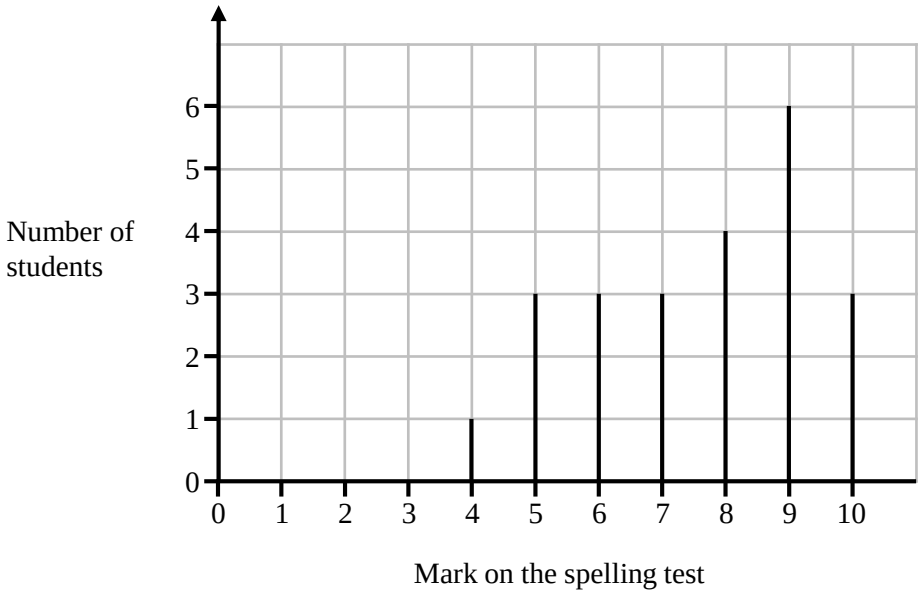
Work out an estimate for the height, in metres, of the building.

..... m

(Total for Question 13 is 2 marks)

Turn over ▶

14 The graph shows the spelling test scores for a class of students.



(a) How many students scored less than 6 marks?

.....

(1)

(b) Write down the modal mark for the spelling test.

.....

(1)

(c) Work out the median mark for the spelling test.

.....

(2)

(Total for Question 14 is 4 marks)

15 A football team plays 38 matches in a season.

Half of their matches are played at home, the other half away.
12 of their home games are wins.
2 of their home games are losses.
8 of their away games are draws.
5 of the games during the season are losses.

(a) Use this information to complete the two-way table.

	Win	**Draw**	**Lose**	**Total**
Home				
Away				
Total				38

(Total for Question 15 is 3 marks)

16 Elizabeth, Jenny and Natasha visit a sweet shop.

Elizabeth buys $\frac{1}{5}$ of a kilogram of sweets.

Jenny buys $\frac{3}{8}$ of a kilogram of sweets.

Natasha buys $\frac{9}{10}$ of the amount that Elizabeth buys.

Work out the total mass of all of the sweets that they buy.
Give your answer in grams.

..... g

(Total for Question 16 is 4 marks)

17 Jim buys a wardrobe for £30.

He sells it for £44.

Work out Jim's percentage profit.
Give your answer to 1 decimal place.

..... %

(Total for Question 17 is 3 marks)

18 The table gives information about the number of detentions received by 20 students during one week.

Detentions	Frequency
0	12
1	4
2	1
3	3

Work out the mean number of detentions.
Give your answer as a decimal.

.....

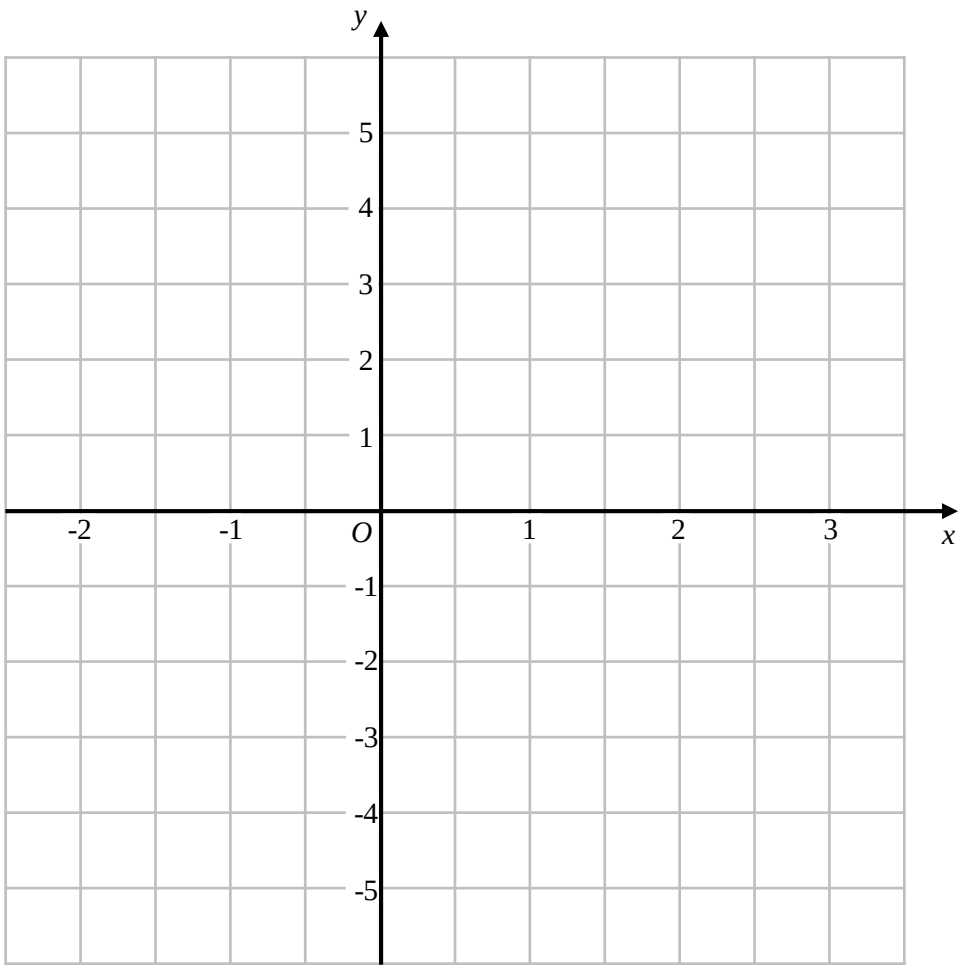
(Total for Question 18 is 3 marks)

19 (a) Complete the table of values for $y = 2x - 1$

x	-2	-1	0	1	2	3
y		-3				5

(b) On the grid, draw the graph of $y = 2x - 1$ for values of x from -2 to 3

(2)

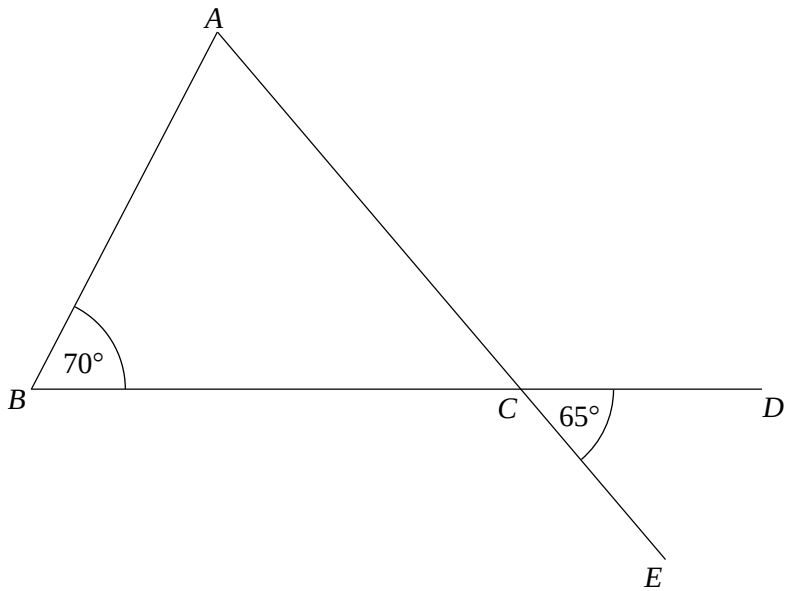


(2)

(Total for Question 19 is 4 marks)

Turn over ▶

20



ABC is a triangle.
ACE and *BCD* are straight lines.

Work out the size of angle *BAC*.
Give a reason for each stage of your working.

.....°

(Total for Question 20 is 4 marks)

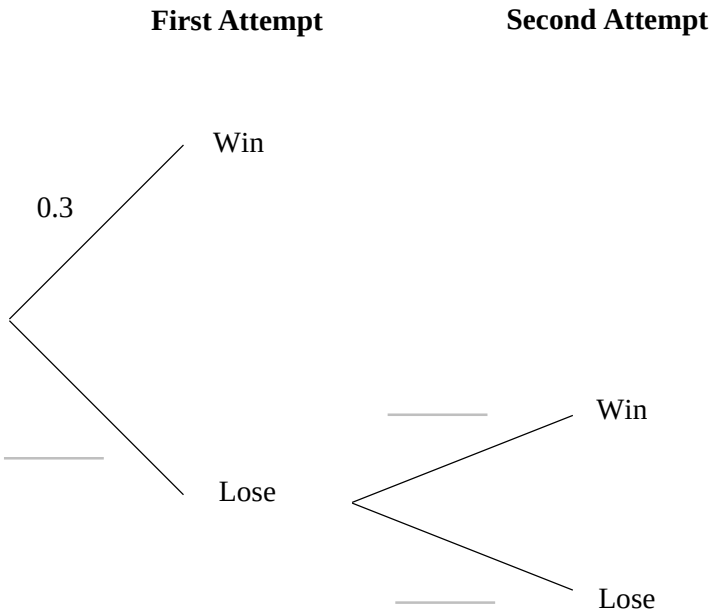
21 Olivia is playing a game at the fair. The probability that she wins is 0.3.

Olivia plays the game to try and win a prize.

If she wins the first attempt, she stops and takes her prize.

If she loses the first attempt, she tries one more time.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Olivia does not win a prize.

.....

(2)

(Total for Question 21 is 4 marks)

Turn over ▶

22 (a) Simplify $(m^3)^4$

.....

(1)

(b) Simplify $20a^9b^{10} \div 4a^3b^2$

.....

(2)

(c) Expand and simplify $(x + 6)(x – 2)$

.....

(2)

(d) Factorise $12y – 2y^2$

.....

(2)

(Total for Question 22 is 7 marks)

23 Rashid buys a car for £20000.

Each year the car loses 15% of its value.

Show that after 3 years the value of the car is still greater than £12000.

(Total for Question 23 is 2 marks)

24 Bryn is going on holiday to Europe.

He changes £440 into euros for spending money.

Whilst on holiday he spends €470.

When he returns, he changes his remaining euros back into pounds.

Use the exchange £1 = €1.25 to work out how many pounds Bryn has after his holiday.

£ .....

(Total for Question 24 is 3 marks)

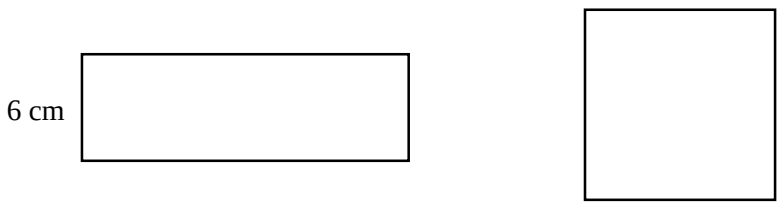
25 A number, n, is rounded to 2 decimal places.
The result is 3.17

Complete the error interval for n.

..... $\leq n <$ .....

(Total for Question 25 is 2 marks)

26 Here is a rectangle and a square.



The height of the rectangle is 6 cm.

The ratio of the height of the rectangle to its width is 3 : 10

The ratio of the height of the rectangle to the height of the square is 1 : 2

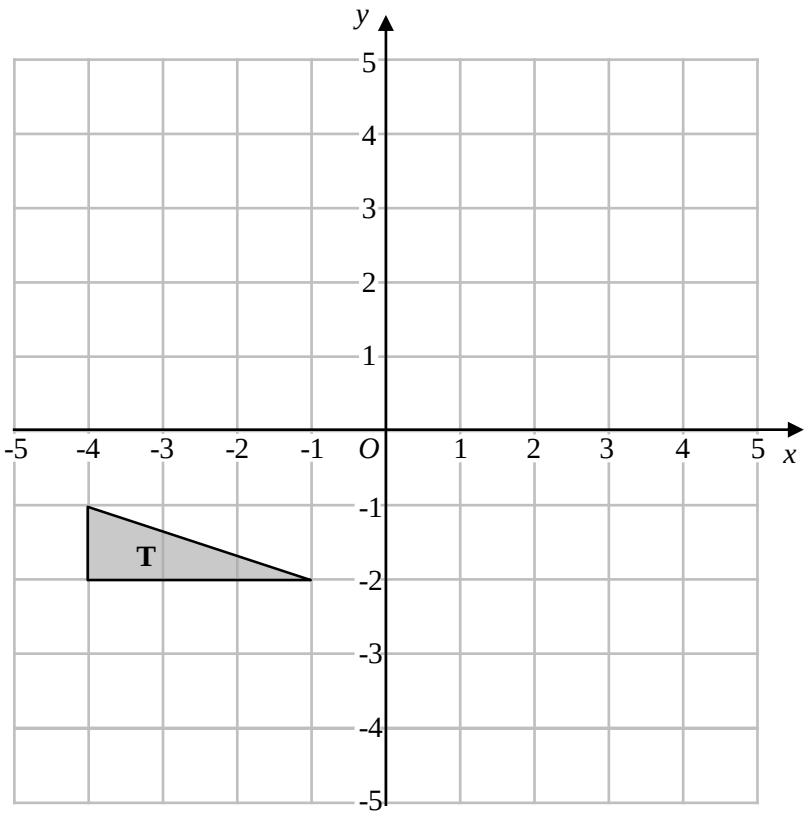
Find the ratio of the area of the rectangle to the area of the square.

Give your answer as a ratio in its simplest form.

.....

(Total for Question 26 is 3 marks)

27



(a) Rotate triangle **T** 90° clockwise about the origin.
Label the new triangle **A**.

(b) Translate triangle **T** by the vector $\begin{pmatrix} 5 \\ 4 \end{pmatrix}$
Label the new triangle **B**.

(Total for Question 27 is 2 marks)

28 It takes a gardener 30 minutes to mow a lawn that is 8 m by 10 m.

Assuming the gardener works at the same rate, work out how long the gardener would take to mow a lawn that is 32 m by 17 m.

Give your answer in hours and minutes.

..... hours ..... minutes

(Total for Question 28 is 4 marks)

29 Write 5.2 m^2 in cm^2

..... cm^2

(Total for Question 29 is 1 mark)

30 Solve the simultaneous equations

$$2x + 6y = 2$$
$$3x - 2y = 14$$

$x =$ .....

$y =$ .....

(Total for Question 30 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS