www.dynamicpapers.com

Cambridge Assessment International Education

Cambridge International AS & A Level

INFORMATION TECHNOLOGY **9626/04**

Paper 4 Advanced Practical **February/March 2022**

2 hours 30 minutes

4259059993

You will need: Candidate source files (listed on page 2)

INSTRUCTIONS

- Carry out every instruction in each task.
- Save your work using the file names given in the task as and when instructed.
- You must **not** have access to either the internet or any email system during this examination.
- You must save your work in the correct file format as stated in the tasks. If work is saved in an incorrect file format, you will **not** receive marks for that task.

INFORMATION

- The total mark for this paper is 90.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **8** pages. Any blank pages are indicated.

© UCLES 2022

[Turn over

www.dynamicpapers.com

You have been supplied with the following source files:
Heron.jpg **Task4.html**

Create a folder called **Examination**. You must save all your work in this folder.
Copy these files into this folder.
Do **not** delete these files when submitting your work.
Do **not** 'tidy' the folder by deleting files created at any stage of attempting the tasks.

You must use the most efficient methods to solve each task. All work produced must be of a professional standard and contain your candidate details.

Task 1

Create this logo for a travel company using the file **Heron.jpg**



The logo should be 10 cm × 10 cm with all the proportions and colours as shown.

Note the following important features shown below.



The foliage fills the bottom of the red ellipse.



All text has a black outline and a white to red vertical gradient fill.





Each letter of the curved text sits halfway through the outline of the red ellipse.

Save the logo as follows:

1. as a **scalable vector graphic** (.svg)
   sized 10 cm × 10 cm
   named **HeronV10cm_** followed by your centre number_candidate number
   e.g. HeronV10cm_ZZ999_9999

2. as a **bitmap** with a transparent internal background
   sized 200 pixels × 200 pixels
   named **HeronV200px_** followed by your centre number_candidate number
   e.g. HeronV200px_ZZ999_9999

[20]

© UCLES 2022

www.dynamicpapers.com

Task 2

Create an animation that simulates a yellow towel unrolling to show the text **HERON**. Each letter should become visible at the appropriate time as the towel is unrolled.

The stage or canvas should be 550 pixels wide by 400 pixels high. The proportions and text formatting should be kept as shown.



The unrolling should take **3** seconds. Once the unrolling is complete, the text **Villa Holidays** should appear.

After a further **2** seconds, the animation should start again.

Export the animation as **VillaHolidays_** followed by your centre number_candidate number as an **animated gif**.
e.g. VillaHolidays_ZZ999_9999

[30]

Task 3

(a) Create this layout in a spreadsheet application.

	A	B	C	D	E	F	G	H	I
2	**Probability Simulation**				Totals	Number of simulations	**KEEP** chosen box Wins	**SWAP** to other box Wins	%age of Wins if Swapped
3									
4									
5	Box with gift (1, 2 or 3)	Box chosen (1, 2 or 3)	**KEEP** chosen box	**SWAP** to other box		Number of simulations	**KEEP** chosen box Wins	**SWAP** to other box Wins	%age of Wins if Swapped
6						100			

Set:

- all text to an 11-point sans-serif font
- the case and colour of all the text as shown
- rows 2 and 5 to the same height
- all text to display as shown.

Save the spreadsheet as **Probability_Simulation_** followed by your centre number_candidate number
e.g. Probability_Simulation_ZZ999_9999

[3]

© UCLES 2022

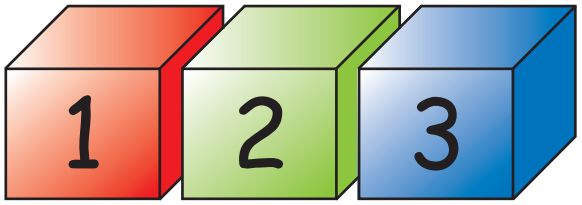
[Turn over

www.dynamicpapers.com

You are required to run a probability simulation.

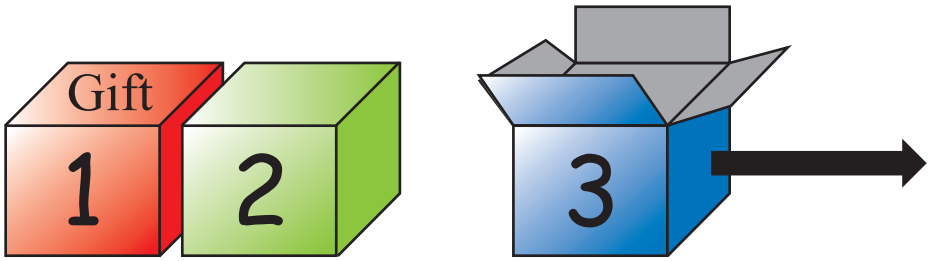
The simulation is of a game where a player must guess which of 3 boxes contains a gift.

A gift is hidden at random in one of the boxes; the player does not know which box the gift is in.



Stages of the game:

- *The player chooses a box but is not allowed to open it.*
- *The person who hid the gift now opens one of the two boxes **not** chosen by the player.*
  *The person who hid the gift always opens a box that does **not** contain the gift.*
  For example, if the gift is in box 1 and the player chooses box 2 then box 3 is opened and removed.



- *The player then chooses whether to keep the same box or to swap to the other unopened box.*
- *The player opens their chosen box to see if they have won the gift.*

(b) In cells **A6** and **B6** in your spreadsheet, enter formulae to display randomly generated numbers 1, 2 or 3.

In cells **C6** and **D6** enter formulae to display whether the player wins or loses the gift.

For example:

	A	B	C	D
5	Box with gift (1, 2 or 3)	Box chosen (1, 2 or 3)	**KEEP** chosen box	**SWAP** to other box
6	2	2	WIN	LOSE
7	1	2	LOSE	WIN

Replicate cells **A6:D6** so there are 1500 simulations.

[7]

© UCLES 2022

www.dynamicpapers.com

(c) In cell **F7** enter a formula to increase the number of simulations by 100.
Replicate the formula to reach 1500 simulations.
In cell **G6** enter a formula to display the total number of wins for the KEEP strategy for 100 simulations.
In cell **H6** enter a formula to display the total number of wins for the SWAP strategy for 100 simulations.
In cell **I6** enter a formula to display the percentage number of wins for the SWAP strategy for 100 simulations.
Display the data for the number of simulations in each cell in the range **G7:I20**

Note:
The data shown in columns G:I is only example data. Your data is likely to be different.

	F	G	H	I
5	Number of simulations	**KEEP** chosen box Wins	**SWAP** to other box Wins	%age of Wins if Swapped
6	100	34	66	66%
7	200	60	140	70%
8	300	94	206	69%
9	400	124	276	69%

	F	G	H	I
17	1200	383	817	68%
18	1300	409	891	69%
19	1400	449	951	68%
20	1500	477	1023	68%

[8]

(d) In cells **F3:I3** enter formulae to display the totals for the 1500 simulations.

Note:
The data shown in columns G:I is only example data. Your data is likely to be different.

F	G	H	I
Number of simulations	**KEEP** chosen box Wins	**SWAP** to other box Wins	%age of Wins if Swapped
1500	493	1007	67%

[2]

© UCLES 2022

[Turn over

www.dynamicpapers.com

Task 4

(a) Open **Task4.html** in a browser. The page should be a game where you must guess a number between 1 and 10.

Open the file in your text editor and amend the file so that the page displays an alert with the text **Well done** if the guess is correct, or **Sorry that's wrong** if the guess is incorrect.

Save the file in **html format** as **Task4a_** followed by your centre number_candidate number e.g. Task4a_ZZ999_9999

[7]

(b) Edit the *Task4a* file to add a count of the number of attempts to guess the correct number.

Amend the alerts as follows:

- If the guess is wrong, the alert should display **Try again**
- If the guess is correct, the alert should display **Well done. You took** *n* **tries.**
  [*n* is the number of attempts.]

Save the file in **html format** as **Task4b_** followed by your centre number_candidate number e.g. Task4b_ZZ999_9999

[7]

(c) Edit the *Task4b* file so that, instead of displaying the result in alerts, the messages are displayed on the page at the *id= "Result"* HTML attribute.

Add programmer's comments to annotate your code and explain each stage of the script.

Save the file in **html format** as **Task4c_** followed by your centre number_candidate number e.g. Task4c_ZZ999_9999

[6]

© UCLES 2022

www.dynamicpapers.com

BLANK PAGE

© UCLES 2022

www.dynamicpapers.com

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

© UCLES 2022