



MINISTRY OF EDUCATION, SINGAPORE
in collaboration with
CAMBRIDGE INTERNATIONAL EDUCATION
Secondary Education Certificate

G2 COMPUTING

K237/01

Paper 1 e-Examination

For examination from 2027

SPECIMEN E-EXAMINATION

1 hour 30 minutes

INSTRUCTIONS

Answer **all** questions.

When instructed to start the examination, click the **START** button below.

At the end of the examination, click **SUBMIT**.

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Questions 18, 19 and 20 © Microsoft Microbit; <https://makecode.microbit.org/>

Section A

1 What is an output device?

- A** microphone
- B** projector
- C** touch pad
- D** webcam

[1]

2 Which secondary storage device has no moving parts?

- A** hard disk drive
- B** magnetic tape
- C** main memory
- D** solid-state drive

[1]

3 Which statement describes a graphics processing unit (GPU)?

- A** It always has a faster clock speed than the CPU.
- B** It always has fewer processor cores than the CPU.
- C** It can have its own memory.
- D** It can only be used for rendering graphics.

[1]

4 Which statement describes a feature of an intranet?

- A** It can only be accessed by specific users.
- B** It has no limit on the number of users.
- C** It is always global in scale.
- D** It is publicly available.

[1]

5 Which device communicates with an internet service provider so a computer can connect to the internet?

- A modem
- B network interface card
- C router
- D wireless printer

[1]

6 Which statement describes a WAN?

- A It connects computers in one building.
- B It connects different local area networks across long distances.
- C It is always owned by one company.
- D It uses media access control (MAC) addresses to route data.

[1]

7 What does copyright law prohibit?

- A access to computer systems without consent
- B disclosure of personal data belonging to others without consent
- C distribution of images for cyberbullying
- D distribution of materials belonging to another without consent

[1]

8 Which password is the strongest?

- A Computer12
- B C0mpuT3r\$
- C Computers
- D c0mput3r

[1]

- 9 What is **not** the purpose of a privacy policy on a company website?
- A To describe the circumstances under which user data may be shared.
 - B To explain how user data is collected, stored and protected.
 - C To inform users of data on the goods and services available.
 - D To notify users about their rights regarding their personal information.

[1]

Use the spreadsheet to answer **Questions 10, 11, and 12**

	A	B	C	D	E	F
1	shop sales					
2						
3	item	price	number sold	total	computer	sales position
4	laptop	\$629.00	4	\$2,516.00	Yes	2
5	surface	\$749.00	4	\$2,996.00	Yes	1
6	charger cable	\$49.00	40	\$1,960.00	No	3
7	external SSD	\$45.00	18	\$810.00	No	5
8	webcam	\$35.00	25	\$875.00	No	4
9						
10				total sales		\$9,157.00
11				computer sales		\$5,512.00

- 10 Which function can be used to find the **sales position** for each item?
- A COUNT
 - B MODE.SNGL
 - C RANK.EQ
 - D SUM
- 11 Which function can be used to calculate the computer sales in cell **F11**?
- A CONCAT
 - B COUNTIF
 - C SUMIF
 - D VLOOKUP

[1]

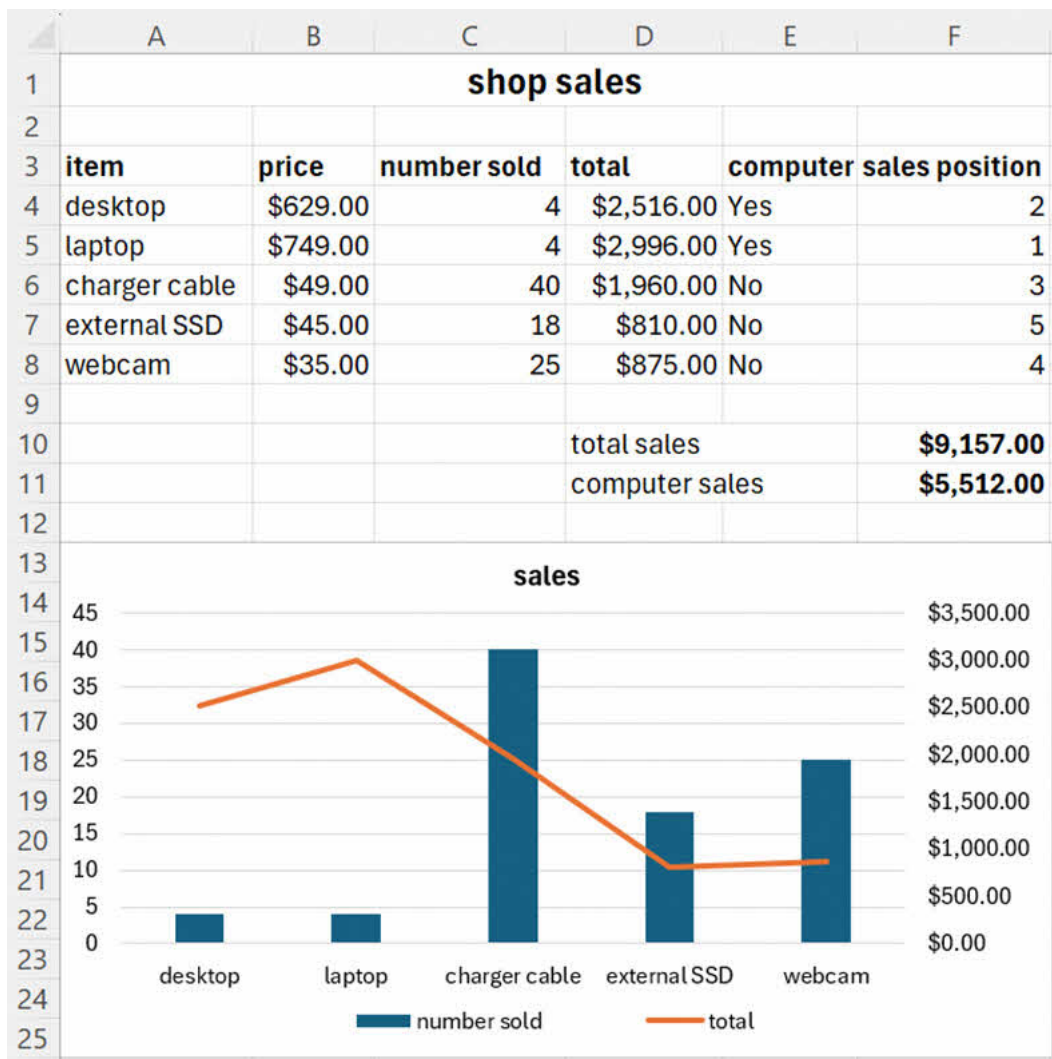
[1]

12 Which spreadsheet feature is used to display only the computer items?

- A conditional formatting
- B data validation
- C filtering
- D sorting

[1]

13 Which cells were used to create the chart?



- A A3:A8 and C3:D8
- B A3:A8 and D3:D8
- C A3:C8
- D B3:D8

[1]

14 Watch the animation.

Which feature was used in this animation?

- A** cut
- B** fragment
- C** intersect
- D** ungroup

[1]

15 Which term refers to the difference between the lighter and darker areas in a graphic?

- A** brightness
- B** contrast
- C** sharpness
- D** transparency

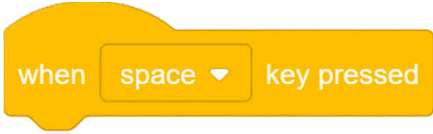
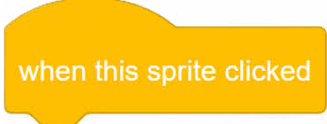
[1]

16 Which statement is correct for videos with low frame rates?

- A** Videos appear smoother.
- B** Videos are higher quality.
- C** Videos have fewer colours.
- D** Videos need less storage space.

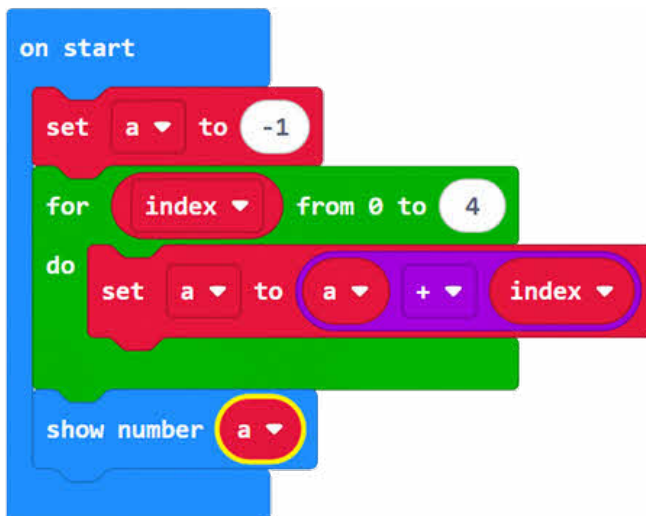
[1]

17 Which block is usually used with a broadcast block?

- A 
- B 
- C 
- D 

[1]

18 A microcontroller has been programmed to output a value.



Which value will be output when this script is executed?

- A 3
- B 5
- C 9
- D 14

[1]

- 19 A microcontroller is programmed to simulate a magic wand that lights up when it is waved up and down.



Which block can be used to detect when the wand is waved up and down?

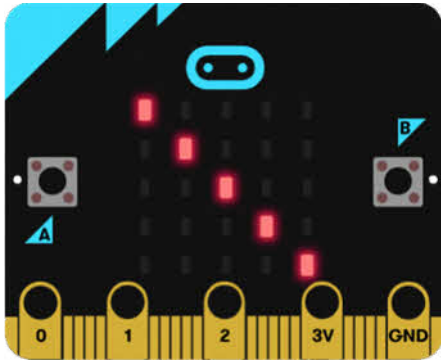
- A acceleration (mg) x ▼
- B compass heading (°)
- C light level
- D temperature (°C)

[1]

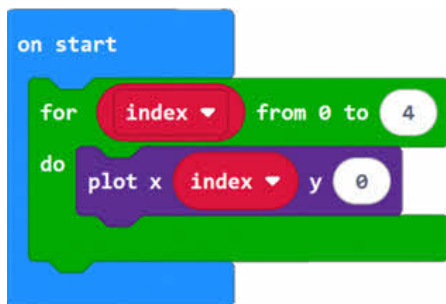
20 A microcontroller has five lit LEDs.

Which script will produce this output?

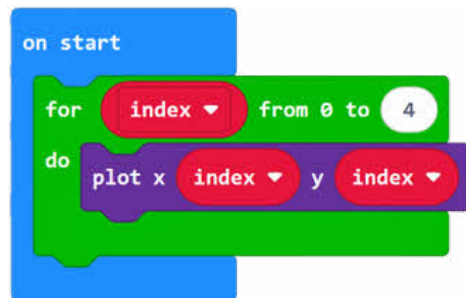
output



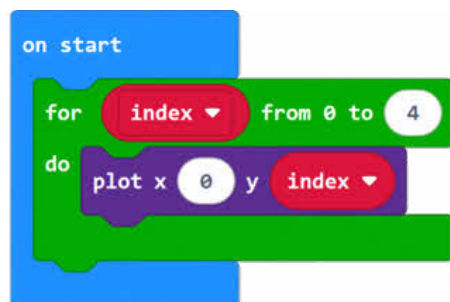
A



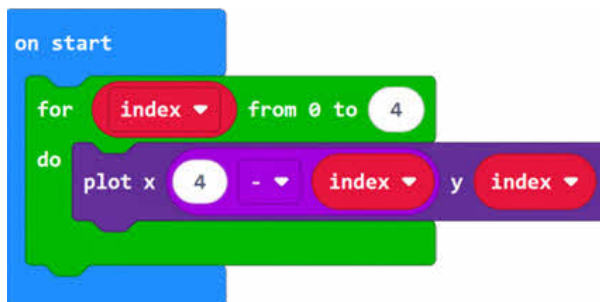
B



C



D



[1]

Section B

- 21** Insert the correct values to complete these sentences.

A byte contains bits.

A petabyte is times larger than a gigabyte.

[2]

- 22** A company uses magnetic storage media to store files in its data centre.

Give **two** reasons why a company uses magnetic storage instead of solid-state storage.

1

2 [2]

- 23** Give **two** ways to improve the performance of a computer system by changing the specification of its central processing unit (CPU).

1

2 [2]

- 24** A student is using a mobile phone. The phone has features that use artificial intelligence (AI).

(a) Describe what is meant by artificial intelligence (AI).

..... [2]

(b) Give **two** examples of tasks that can be performed by AI when interacting with the user interface of a mobile phone.

1

2 [2]

25 Malware is a form of malicious software.

Draw **one** line to connect each type of malware to the most appropriate description.

type of malware

description

ransomware

malicious code that will duplicate and spread by attaching itself to files

spyware

malicious code that can self-replicate and spread across a network without being attached to other files

virus

malicious code that is hidden inside a program which appears to be genuine

worm

malicious code that will collect information about users' activities without their knowledge

malicious code that will encrypt files on a computer system to prevent access to them

[4]

26 Media software can use vector graphics and raster graphics.

Three descriptions are shown in the table.

Select **one or more** boxes on each row to identify whether each description applies to vector graphics or raster graphics.

	vector	raster
resizing can result in loss of quality	☐	☐
can support transparency	☐	☐
is composed of nodes and paths	☐	☐

[3]

27 A teacher is producing an interactive presentation for a school open day.

(a) Insert the correct term to complete this sentence.

When planning the presentation, a can be used to plan the order of the slides.

[1]

(b) Give **two** benefits of using a slide master feature when creating the presentation.

1

2

[2]

- 28 A spreadsheet stores temperature readings from a seven-day period during winter. Eight readings are taken throughout each day.

	A	B	C	D	E	F	G	H	I	J
1										
2				day						
3				1	2	3	4	5	6	7
4		reading	1	10.2	8.5	7.7	7.6	8.1	7.4	5.1
5			2	11.3	12.4	9.1	10.8	9.8	10.5	6.4
6			3	13.3	13.9	10.4	13.6	13.2	10.8	9.4
7			4	15.3	14.8	11.4	14	16.7	13.9	11.8
8			5	11.4	13	8.2	10.9	15.7	11.3	9.3
9			6	7.8	11.1	7.7	9.9	12.2	9.8	7.1
10			7	7	9.1	7.6	7.1	8.3	6.2	3.9
11			8	5.1	5.2	3.9	3.9	6.1	2.6	1.5
12			average	10.2	11.0	8.3	9.7	11.3	9.1	6.8
13										
14			day	2			maximum temperature:			16.7
15			reading	6			minimum temperature:			1.5
16			value	11.1			readings above 15.0			3

- (a) The value in cell **H8** is changed to 16.8 and the average for day 5 in cell **H12** is automatically updated.

Identify **one other** cell that will also be automatically updated.

..... [1]

- (b) The function in cell **D12** is copied to cells **E12** to **J12**.

Name the type of cell referencing that the function in cell **D12** uses.

..... [1]

- (c) The readings are all values from 0.0 to 20.0

Identify the name of the spreadsheet feature that can be used to check that the values entered are between 0.0 and 20.0

..... [1]

- (d) Cell **J16** contains a formula to identify how many of the readings are above 15.0

Identify the formula used in **J16**.

..... [3]

- (e) Cell **D16** displays the 6th temperature reading on day 2 using the values in cells **D14** and **D15**.

Identify the formula used in **D16**.

..... [3]

- 29** Computers have media access control (MAC) and internet protocol (IP) addresses.

Three descriptions are shown in the table.

Select **one or more** boxes on each row to identify whether each description applies to a MAC address or an IP address.

	MAC	IP
The address is usually permanent.	☐	☐
The address is used to direct data across different LANs.	☐	☐
The address is usually unique within a LAN.	☐	☐

[3]

- 30** A school operates a client-server network across its site.

- (a) Name the type of network based on its geographical scope.

..... [1]

- (b) Name the type of network device that a computer must contain to allow it to connect to the network.

..... [1]

- (c) Identify **three** possible services provided by a server in a client-server network.

1

2

3

[3]

- (d) The school network allows devices to connect wirelessly.

Give **three** benefits of using wireless communication.

1

2

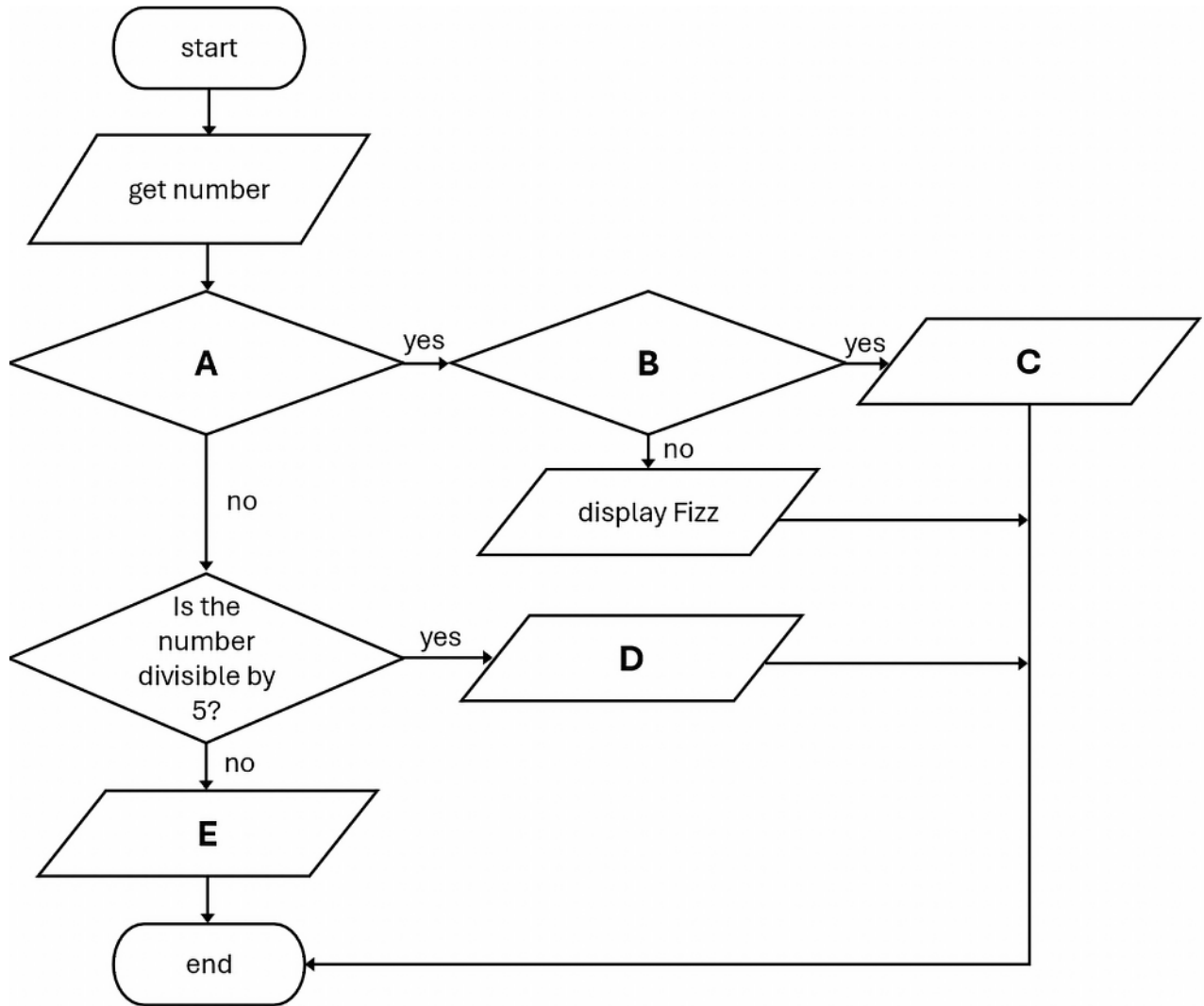
3

[3]

31 In the game FizzBuzz a user enters a number.

- If the number is **only** divisible by 3, the program displays Fizz.
- If the number is **only** divisible by 5, the program displays Buzz.
- If the number is divisible by **both** 3 and 5, the program displays FizzBuzz.
- If the number is **not** divisible by either 3 or 5, the program displays the number entered.

The flowchart shows the program to play FizzBuzz.



Drag the correct terms from the option area to complete each option from the flow chart.

A	
----------	--

B	
----------	--

C	
----------	--

D	
----------	--

E	
----------	--

Option area:

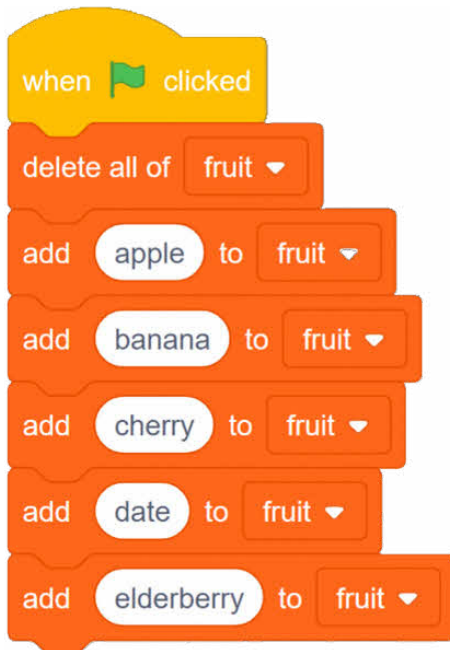
display Buzz	display Fizz	display FizzBuzz	display number
--------------	--------------	------------------	----------------

Is the number divisible by 3?	Is the number divisible by 5?
-------------------------------	-------------------------------

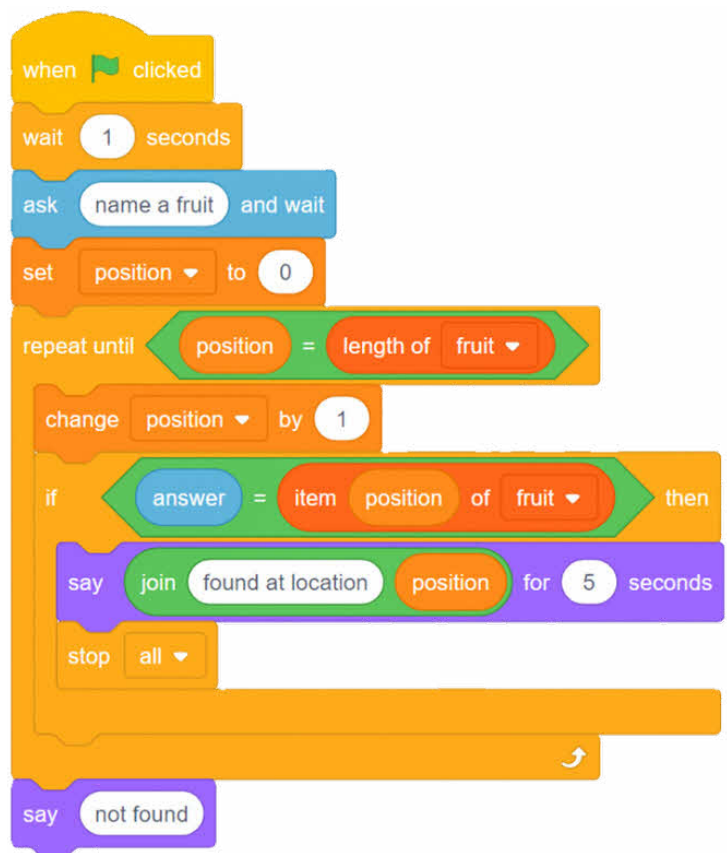
[5]

32 This program is written in Scratch.

Script A



Script B



(a) State the output of the program when the input 'cherry' is entered.

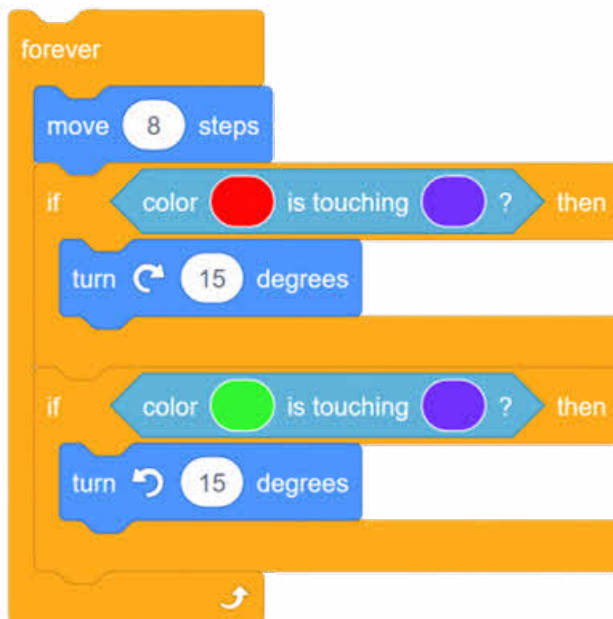
..... [1]

(b) State the purpose of Script B.

..... [2]

33 Watch the animation of a car moving on a racetrack.

The script for the car in the animation is shown.



Near the end of the animation, the car skids off the track.

State **two** changes that could be made to the script to keep the car on the track.

- 1
- 2 [2]

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