ACTIVITY : Selection Statements - WHODUNNIT

The suspects :

Professor Plum
Reverend Green
Miss Scarlet
Mrs Peacock
Mr Black

Doctor Pink has been found murdered downstairs in the Kitchen, battered by some lead piping, at 20:00 hours. By a process of elimination find out **whodunnit** by looking at the following pseudo code.

```
IF TimeFound < 21:00 THEN
      IF (Location = Downstairs) AND (weapon=knife) THEN
            Reverend Green = innocent
      END IF
      IF (Location = Downstairs) OR (weapon=knife) THEN
            Mr Black = innocent
      ELSE
            Miss Scarlet=Innocent
      ENDIF
ELSE
      Professor Plum = innocent
END IF

IF NOT (Location=Conservatory) THEN
      IF Location=Kitchen THEN
            CASE Weapon of
                  Gun: Mr Black=innocent
                  Candlestick: Reverend Green = innocent
                  Lead Piping : Mrs Peacock = innocent
                  Rope : Professor Plum=innocent
            END CASE
      END IF
      IF (location <> upstairs) AND (TimeFound>12:00) Then
            Professor Plum = innocent
            IF location=kitchen THEN
                  Miss Scarlet=innocent
            ENDIF
      ELSE
            Mr Black = innocent
      ENDIF
END IF
```

The murderer was _____

2. The following three sentences are all TRUE.
    - None of Ahmed's friends go to Highmount School.

- Belinda is Kate's friend.
- All of Kate's friends go to Highmount School

Based on these three facts, which of the following sentences is also true?

- Belinda is definitely Ahmed's friend
- Belinda is definitely not Ahmed's friend

Belinda may or may not be Ahmed's friend.

3. Write an algorithm that will calculate the amount of paint required to paint a room. The user will enter the dimensions of the room, the dimensions of each unpaintable area (such as windows, doors or brickwork) and the number of coats of paint required.

   You can get some handy tips from the site below:

   https://www.dulux.co.uk/en/decorating-tips-and-advice/how-to-calculate-the-right-amount-of-paint

4. Code the program and test it. Take a print screen of your code and explain what it does.

5. Re-write the program using functions.

6. Research what features of Python IDLE you can use for testing and error finding. Produce a PowerPoint which you could present to the rest of the class explaining your findings.