



F13.7 Where marks are lost

Exam preparation · GCSE · about 15 min

Name _____

Class _____

Date _____

What this lesson is about

The ten commonest mistakes, checking on paper, and repairing a broken program.

- The ten that cost the most
- Checking a program on paper
- The slips that break code

Questions

5 marks in all

- Which is the commonest way to lose marks you knew? [1 mark]
☐ A Answering the wrong command word
☐ B Bad spelling
☐ C Writing too neatly
☐ D Using a pencil
- What is wrong with setting a total to 0 inside a loop? [1 mark]
☐ A It is reset every time round, so it never adds up
☐ B Nothing
☐ C It makes the loop slower
☐ D The loop never ends
- `if x = 5:` will not run. Why? [1 mark]
☐ A = assigns; a comparison needs ==
☐ B x must be a string
☐ C There is no colon
☐ D if needs brackets
- Which three values should you trace a program with? [1 mark]
☐ A A normal one, a boundary one and an invalid one
☐ B Three normal ones
☐ C Only the boundary
☐ D Only what the question gives
- What does this program print? [1 mark]

```
total = 0
for n in range(1, 6):
    total = total + n
print(total)
```

The task: repair the program

This program should drive 4 steps of 15 cm, printing `step <n>: <total> cm` after each one, then `total: 60 cm` and turn the LED green. It has three faults. Find them, fix them, and leave the rest alone.

```
# the two lines every program starts with: the commands, then the robot
from bugbot import *
connect()

for step in range(1, 4):
    total = 0
    forward(50, distance=15)
    total = total + 15
    print(f"step {step}: {total} cm")
print(f"total: {total} cm")
led(255, 0, 0)
```

Plan your program here, then type it in and press Run.



Do it on the robot

www.bugbotlab.com/learn/f13-7-where-marks-are-lost/

The simulator checks it and tells you when it passes. Nothing to install, no account.

Challenges

1. Which of the three faults would a trace table have caught first?
2. Add a comment above each fix saying what was wrong.
3. Pick two mistakes from the list of ten that you have made, and write how you will avoid each.