

Exercise 7

Module 7: Algorithms and Computational Thinking

Solution

1.

Answer:

a) decomposition b) finite c) pseudocode d) pattern recognition e) abstraction

2.

Answer:

Step 1: READ ndvi_value from sensor
Step 2: IF ndvi_value < 0.4 THEN
Step 3: LOG a warning message
Step 4: RECOMMEND fertiliser
Step 5: ELSE IF ndvi_value > 0.7 THEN
Step 6: LOG 'crop is healthy'
Step 7: ELSE LOG 'reading is normal'

Accepting any clear correct English steps, exact wording does not matter

3.

Answer:

The same condition (moisture < 0.30) and the same print pattern, only the name changes

4.

Answer:

- a) An algorithm has clear, unambiguous steps, always stops, and gives the correct result every time. A list of ideas is vague.
- b) It is much faster to fix logic errors in plain English than in code. It also helps spot edge cases early.
- c) Any good answer: a car dashboard shows speed without showing engine mechanics. A light switch hides all the wiring.
- d) Any sensible answer: pest detection (capture image → analyse → classify → alert), harvest scheduling, soil mapping.