

Solutions

Each answer shows the steps, then the **result**.

2.1

- to **plan, manage and control** the project — to build the right product, on time, to good quality

2.2

- **Analysis** → **Design** → **Coding** → **Testing** → **Maintenance**

2.3

- the **design** stage

2.4

- keeping the released program **working and useful** — fixing faults found in use, and adapting it to new needs

3.1

- **analysis** — find and document **what** the program must do (the requirements)
- **testing** — run the program against **test data**, compare with expected results, and fix the bugs found

3.2

- waterfall — any one: clear/simple, well documented, easy to manage with stable requirements
- iterative — any one: problems caught earlier, copes with changing requirements, a working partial version appears sooner

3.3

- a suitable model: **agile** (or iterative / RAD)
- because it works in **short repeated cycles with user feedback**
- so changing requirements can be handled without restarting the whole project

3.4

(a) changing the program so it still works in a **new environment** — a new operating system, new hardware, or a change in the law

(b) e.g. the OS is upgraded; a new tax rate / data-protection law; the program must run on new hardware