

Solutions

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

2.1

- advantage: it follows the same people, so age effects are not confounded with cohort; disadvantage: it is slow and participants drop out

2.2

- a difference caused by being born in a different era rather than by age; it threatens cross-sectional designs

2.3

(a)

- cross-sectional

(b)

- the older group grew up without computers, so the difference may be a cohort effect

3.1 B

- following one group removes the generational confound

3.2 B

- a sensitive period makes learning easiest without making it impossible later

3.3

(a)

- it delivers results now, at far lower cost and with no attrition

(b)

- age groups differ in generation as well as age, so any difference found cannot be attributed to ageing alone

3.4

(a)

- Design A is **cross-sectional**; Design B is **longitudinal** (1, 1)

(b)

- Design A gives results immediately and cheaply, with no participants lost over time (1). Design B follows the same individuals, so any change observed is genuine development rather than a difference between different people (1)

(c)

- A cohort effect is a difference between groups caused by having been born at a different time and having had different experiences, not by age (1). Design A compares three separate groups, so the eight-year-olds may differ from the four-year-olds because of changes in schooling or media rather than because they are older — age and cohort are confounded (1)

(d)

- **Attrition** — participants drop out over the four years, and those who remain may differ systematically from those who leave (1). (Practice effects from repeated testing are also acceptable.)