Solutions

Marking: **K** = knowledge, **App** = applying it to the business in the case, **An** = analysis (explaining causes and effects step by step), **Ev** = evaluation (a judgement with reasons, for this business). In calculations, **M1** is for the method and **A1** for the answer. Longer answers are marked in levels: the top level needs analysis applied to the business **and** a justified judgement.

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

2.1

- in order: $19, 22, 24, 28, 31, 36, 45$
- median **28**

2.2

- $400 / 20\,000 \times 100$
- **2**%

2.3

- questionnaire: primary
- government data: secondary

3.1

- in a random sample every member of the target market has an equal chance of being chosen, so there is less bias (K)
- a larger sample is less affected by a few unusual answers (An)
- so the results are more likely to show what the whole market thinks (An)

3.2

Any two, each analysed (2 marks each):

- only people online and interested reply, so the sample may not represent the market (K, An)
- people may not answer honestly or carefully (K, An)
- questions cannot be explained, so answers may be misunderstood (K, An)
- response rates are often low (K, An)

3.3

(a) $0.3 \times 500 = 150$; $0.3 \times 40\,000 =$ **12 000**

(b) points to include:

- the sample was taken in one place on one day, so it may miss people who work on Saturdays or live outside the centre (App)
- it is not random: people who stop to answer may be more interested in fitness (An)
- saying "I would join" is not the same as paying a monthly fee (An)
- 500 is small compared with 40 000, so the result could differ by chance (An)

Levels: **top** (5–6) two points, each analysed step by step and applied to this business; **middle** (3–4) analysis of one point, or two points with little development; **bottom** (1–2) relevant points, little explanation.

(c) points to include:

- even if only a third of those who said yes actually join, that is about 4000 members, which may be enough (App)
- the chain should also study competitors, local incomes and the cost of a site (An)
- secondary data on gym use in similar towns would test the estimate (An)
- opening costs are high; a wrong decision is expensive (An)
- judgement: the research is encouraging but not reliable enough alone; carry out a wider random survey or a trial (e.g. pre-sale of memberships) before deciding (Ev)

Levels: **top** (8–10) analysis applied to this business, and a justified judgement that answers the question; **middle** (4–7) some analysis applied to the business; judgement weak or missing; **bottom** (1–3) relevant points, little explanation or application.