MARKS

3

1. Suppose you are writing an article for a consumer magazine based on a survey of the magazine's readers on the reliability of their household appliances. Of 13,376 readers who reported owning Brand C dishwashers, 2,942 required a service call during the past year, whereas 192 service calls were reported over the same period by 480 readers who owned Brand D dishwashers. Describe an appropriate variate to measure the reliability of a brand of dishwasher, and use its values to assess Brands C and D on the basis of the survey information.

```
┌─────────────────┐
│                 │
│                 │
└─────────────────┘
```
More reliable brand

MARKS

4

(2, 2)

2. All the members of a physical education class are asked to measure their pulse rate as they sit in a classroom. The students use several methods, among which are:

   Method 1: count heart beats for 6 seconds and multiply by 10 to get beats per minute;

   Method 2: count heart beats for 30 seconds and multiply by 2 to get beats per minute.

   (a) Which method is likely to yield a more accurate measurement? Explain briefly.

   (b) One student proposes **Method 3:** starting exactly on a heart beat, measure the time for the next 50 beats and then convert this time into beats per minute. Is Method 3 likely to yield a more or less accurate measurement than 1 and 2? Explain briefly.

   (a)

```
┌─────────────────┐
│                 │ (a)
└─────────────────┘
```
Method preferred

   (b)

```
┌─────────────────┐
│                 │ (b)
└─────────────────┘
```
More or *Less*