Random Sampling Methods

**Key Understanding:** every member is equally likely to be chosen

<table>
<thead>
<tr>
<th>Simple Random Sampling</th>
<th>– Use a random number generator or a random number table to determine which members are chosen.</th>
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<tbody>
<tr>
<td>Cluster Sampling</td>
<td>– Population is divided into clusters reflecting the variability within population and then a certain number of clusters are randomly selected and every member of the selected cluster is surveyed.</td>
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<tr>
<td>Systematic Sampling</td>
<td>– Sampling every $k$\textsuperscript{th} member of a population after randomly determining the first individual by selecting a random number between 1 and $k$.</td>
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<tr>
<td>Stratified Random Sampling</td>
<td>– The population is divided into two or more groups (strata) according to some criterion and subsamples are randomly chosen from each strata.</td>
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Identify the type of sampling used in each of the following vignettes and explain your choice:

1. Ohio wants to gauge public reaction to a proposed tax increase. They randomly select individuals from rural areas, randomly select individuals from suburban areas, and randomly select individuals from urban areas.
   - Type of sampling: __________________
   - Explain:

2. Bauman’s Orchard wants to determine the approximate yield of its peach trees. They divide the orchard into 25 subsections and randomly select 4. They sample all the trees within the 4 subsections to approximate the yield of the orchard.
   - Type of sampling: __________________
   - Explain:

3. Every hundredth hamburger manufactured is checked to determine its fat content.
   - Type of sampling: __________________
   - Explain:

4. Design consultants are selected using random numbers in order to determine annual salaries.
   - Type of sampling: __________________
   - Explain:

5. A survey regarding download time on a certain web site is administered on the internet by a market research firm to anyone who is willing to respond to the survey.
   - Type of sampling: __________________
   - Explain: