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| NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_ | **Stats and probability** |
| Sampling – Quiz4-2 – 14 points | **DATE: Monday, May 01, 2017** |

You want to find the average amount people throw away in their trash in Boston. The city is equally split between apartments (light color) and houses (dark). You believe people living in apartments will have less trash. There are 8 blocks below that all are equally split with apartments and houses.

Block 1 Block2 Block3 Block4 Block5 Block6 Block7 Block8

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| 6.5 | 7.3 | 9.5 | 7.9 | 6.4 | 7.4 | 6.2 | 5.9 |
| 8.6 | 8.9 | 8.2 | 5.2 | 6.9 | 8.9 | 8.1 | 9.6 |
| 8.2 | 8.1 | 9.7 | 9.3 | 9.8 | 8 | 9.6 | 8.6 |
| 9.7 | 9.7 | 10.9 | 9.8 | 11.7 | 10.6 | 8.5 | 11.5 |
| 12.4 | 12.5 | 10.8 | 9.8 | 11.7 | 9.9 | 11 | 10.6 |
| 8.9 | 11.9 | 11.2 | 8.3 | 11.5 | 10.4 | 9.9 | 8.5 |

1. Conduct a simple random sample of size 6. Show all work and explain what you did.

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1. Conduct a stratified sample, also of size 6. Show all work and explain what you did.
2. Conduct a cluster, also of size 6. Show all work and explain what you did.
3. Which technique will have the most variability and why?
4. I’m going to survey 6 of my friends in Boston and find how much trash they throw out. What kind of sampling technique is this and what is wrong with it?

1. Categorize each technique as a simple random sample, stratified sample, systematic sample, cluster sample or convenience sample.

1. Students surveyed 5 randomly selected shoppers each from Whole Foods, Hannaford and Shaws to find the average amount people spent shopping.
2. Researchers recorded every tenth person to enter the store and if they had reusable bags.

2. How would you conduct a sample if you wanted to find? Explain and name the technique.

1. The average size of frogs in Maine. There are 120 ponds in your research area.
2. How Portland schools students feel about their education.

3. What is wrong with the following studies – explain the bias?

a. An online poll was done to determine if you think abortion should be illegal. 62% of respondents said yes.

b. A survey was mailed to 2000 households about their tv viewing preferences. 325 surveys were responded. The average time the respondents said they watched tv was 2.5 hours per day.