

HW2

1.a. Discrete algorithm . Because it is really easy for us to convert the graph based on data distribution.

b. $\text{Cost} = 1 + 2x$

2. When number of points sampled goes to infinity, the data will be more accuracy. The ratio will be the total number of points in the tree.

3. $O(\log n)$

4. There are two main reasons. One is sound pulse diffusion loss with the range. Another is sound pulse will be absorbed by medium like air. And that makes energy loss. Laser scanner is using light. The light moves much faster.

5. a $2 \times (15/300) = 0.1\text{s}$

b The speed of light is too fast.

6. a. Accuracy is 30m radius

Precision is the circle which has 3m as diameter

b. $18000 \text{ readings/hour} = 5 \text{ readings/sec}$, which is 5hz.