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**Question Sheet**  
**Quiz 7 for January 11, 2022**

**The code is 4791 6469**

Which is the correct answer?

**Question 1:**

What is the running time of Fortune's algorithm?

- $O(1)$
- $O(n)$
- $O(n \log n)$
- $O(n^2)$

**Question 2:**

During Fortune's algorithm, what separates the part of the plane for which the Voronoi diagram is known from the part that may still change?

- The sweep line
- A bisector
- The beach line

**Question 3:**

The beach line consists of...

- ... at most  $n$  bisectors.
- ... at most  $2n - 1$  bisectors.
- ... at most  $n - 1$  parabolic arcs.
- ... at most  $n$  parabolic arcs.
- ... at most  $2n - 1$  parabolic arcs.

**Question 4:**

The continuous sweep can be discretized by keeping track of....

- ... site events.
- ... circle events.
- ... both.

**Question 5:**

What can be said about the correspondence between creating parabolic arcs in the beach line and events?

- Parabolic arcs can be created both at circle and site events.
- Parabolic arcs are only created at site events.
- Parabolic arcs are only created at circle events.

**Question 6:**

What can be said about the correspondence between disappearing parabolic arcs from the beach line and events?

- Parabolic arcs can disappear both at circle and site events.
- Parabolic arcs only disappear at site events.
- Parabolic arcs only disappear at circle events.

**Question 7:**

What is critical for achieving optimal running time for Fortune's algorithm?

- Choosing a fast sorting algorithm.
- Using a balanced binary tree for keeping track of objects and events.
- Updating only a constant number of events when the beach line changes.
- Both the second and the third option.
- The first, second and third option.

**Question 8:**

A higher-dimensional interpretation of a complete run of Fortune's algorithm uses

- 2D
- 3D
- 4D
- 5D