Assignment 8

The due date for submitting this assignment is February 20th at 11:59 PM. Please submit your assignment via the course’s online submission platform. Here are the details:

### Question 1

Let \( \Delta \in (0, 2\pi) \) be defined as \( \Delta = \arcsin(\sin(\omega \cdot t)) \); \( \omega \in (0, 2\pi) \). Find the root of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Case 1**: \( \Delta = \arcsin(\sin(\omega \cdot t)) \)
- **Case 2**: \( \Delta = \arccos(\cos(\omega \cdot t)) \)

### Question 2

Let \( \Delta \in (0, 2\pi) \) be defined as \( \Delta = \arcsin(\sin(\omega \cdot t)) \) and \( \omega \in (0, 2\pi) \). Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Case 1**: \( \Delta = \arcsin(\sin(\omega \cdot t)) \)
- **Case 2**: \( \Delta = \arccos(\cos(\omega \cdot t)) \)

### Question 3

Let \( \Delta \in (0, 2\pi) \) be defined as \( \Delta = \arccos(\cos(\omega \cdot t)) \) and \( \omega \in (0, 2\pi) \). Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Case 1**: \( \Delta = \arcsin(\sin(\omega \cdot t)) \)
- **Case 2**: \( \Delta = \arccos(\cos(\omega \cdot t)) \)

### Question 4

Let \( \Delta \in (0, 2\pi) \) be defined as \( \Delta = \arcsin(\sin(\omega \cdot t)) \) and \( \omega \in (0, 2\pi) \). Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Case 1**: \( \Delta = \arcsin(\sin(\omega \cdot t)) \)
- **Case 2**: \( \Delta = \arccos(\cos(\omega \cdot t)) \)

### Question 5

Let \( \Delta \in (0, 2\pi) \) be defined as \( \Delta = \arcsin(\sin(\omega \cdot t)) \) and \( \omega \in (0, 2\pi) \). Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Case 1**: \( \Delta = \arcsin(\sin(\omega \cdot t)) \)
- **Case 2**: \( \Delta = \arccos(\cos(\omega \cdot t)) \)

### Question 6

Let \( \Delta \in (0, 2\pi) \) be defined as \( \Delta = \arcsin(\sin(\omega \cdot t)) \) and \( \omega \in (0, 2\pi) \). Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Case 1**: \( \Delta = \arcsin(\sin(\omega \cdot t)) \)
- **Case 2**: \( \Delta = \arccos(\cos(\omega \cdot t)) \)

---

### Problem Set

- **Problem 1**: Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Problem 2**: Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Problem 3**: Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Problem 4**: Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Problem 5**: Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]

- **Problem 6**: Find the roots of the following equation:

\[ \sin(\Delta) = \cos(\omega \cdot t) \]