Call the sequence of solutions based on integer m the m-sequence and call the sequence of solutions based on integer n the n-sequence.

To show that all solutions of one sequence depending on integer m are included in another sequence depending on the integer n, you must show that for every integer m, there exists an integer n such that n used in the n-sequence produces the same value as does m used in the m-sequence.

To show that not all solutions of one sequence depending on integer m are included in another sequence depending on the integer n, you must show that there exists an integer m that produces a solution in the m-sequence, but there is no integer n that produces the same solution in the n-sequence.

Exercise 2.1

1. Show that the sequence of solutions $x = \frac{5\pi}{6} + \frac{2m\pi}{3}, m \in \mathbb{Z}$ is included in the sequence $x = \frac{\pi}{6} + \frac{2n\pi}{3}, n \in \mathbb{Z}$.
2. Show that the sequence of solutions $x = \frac{3\pi}{4} + 2m\pi, m \in \mathbb{Z}$ is included in the sequence $x = \frac{\pi}{4} + \frac{n\pi}{2}, n \in \mathbb{Z}$.
3. Show that the sequence of solutions $x = \frac{2m\pi}{3}, m \in \mathbb{Z}$ is included in the sequence $x = \frac{2n\pi}{9}, n \in \mathbb{Z}$.
4. Show neither sequence of solutions is included in the other sequence for the sequences $x = \frac{\pi}{7} + \frac{2m\pi}{7}, m \in \mathbb{Z}$ and $x = \frac{\pi}{3} + \frac{2n\pi}{3}, n \in \mathbb{Z}$.