# Water Jug Problem in Artificial Intelligence

- There are two jugs of **volume A litre** and **B litre.**

- Neither has any **measuring mark** on it.

- There is a pump that can be used to fill the jugs with water.

- How can you get exactly **x litre** of water into the **A litre jug,** assuming that we have unlimited supply of water?

- A = 4, B = 3, X = 2

# The Wolf-Goat-Cabbage Problem

- A Farmer travels with wolf, goat and cabbage.
- Wants to cross a river
- A rowboat is available, but with limited capacity (max two riders)
- Wolf eats goat if left alone together
- Goat eats cabbage if left alone together
- How can the farmer cross the river?

Bridge Crossing at Night

- Four people need to cross a **rickety footbridge**.

- At Night with one flashlight,  max two people on bridge.

- Person 1 takes 1 minute to cross the bridge
- Person 2 takes 2 minutes.
- Person 3 takes 5 minutes.
- Person 4 takes 10 minutes.
- A pair must walk together at the rate of the slower person's pace.
- Can they cross the bridge in  17 minutes?