**Use logic to solve these problems:**

**Problem #1** - Six girls were running a race. When the winner crossed the finish line, the following conditions existed

* Bessie is 25 meters behind Rose.
* Rose is 15 meters ahead of Jean.
* Dottie is running beside Aileen.
* Jean is 30 meters behind Sara, who is 5 meters ahead of Aileen.

List the order in which the girls were running when the winner crossed the finish line.

**Problem #2** - Two students, a boy and a girl, are sitting on a bench. "I'm a girl", said the one with blond hair. "I'm a boy", said the one with black hair.

At least one of these students is lying. Which student has blond hair and which has black?

**Problem #3** - A ship in a harbor has a rope ladder, with rungs three decimeters apart, hanging over the side. The bottom rung is resting on the surface of the water. An incoming tide is rising at a rate of 20 centimeters an hour.

At the rate of the incoming tide, how long will it take the first four rungs of the ladder to be covered with water,

**Logic Problem #1**

**Logic Problem #2**

* There are 4 possible combinations:
  1. Both are telling the truth
  2. Both are lying
  3. The boy is lying
  4. The girl is lying
* Possibility 1 is eliminated because it is stated at least one is lying
* Possibilities 3 and 4 are eliminated because of their statements. If one lied, the other must have
* Possibility 2 is the only choice

The girl has black hair and the boy has blond hair.

**Logic Problem #3**

The rungs of the ladder will never be covered. The ship rises with the water.