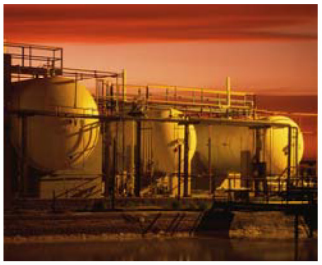
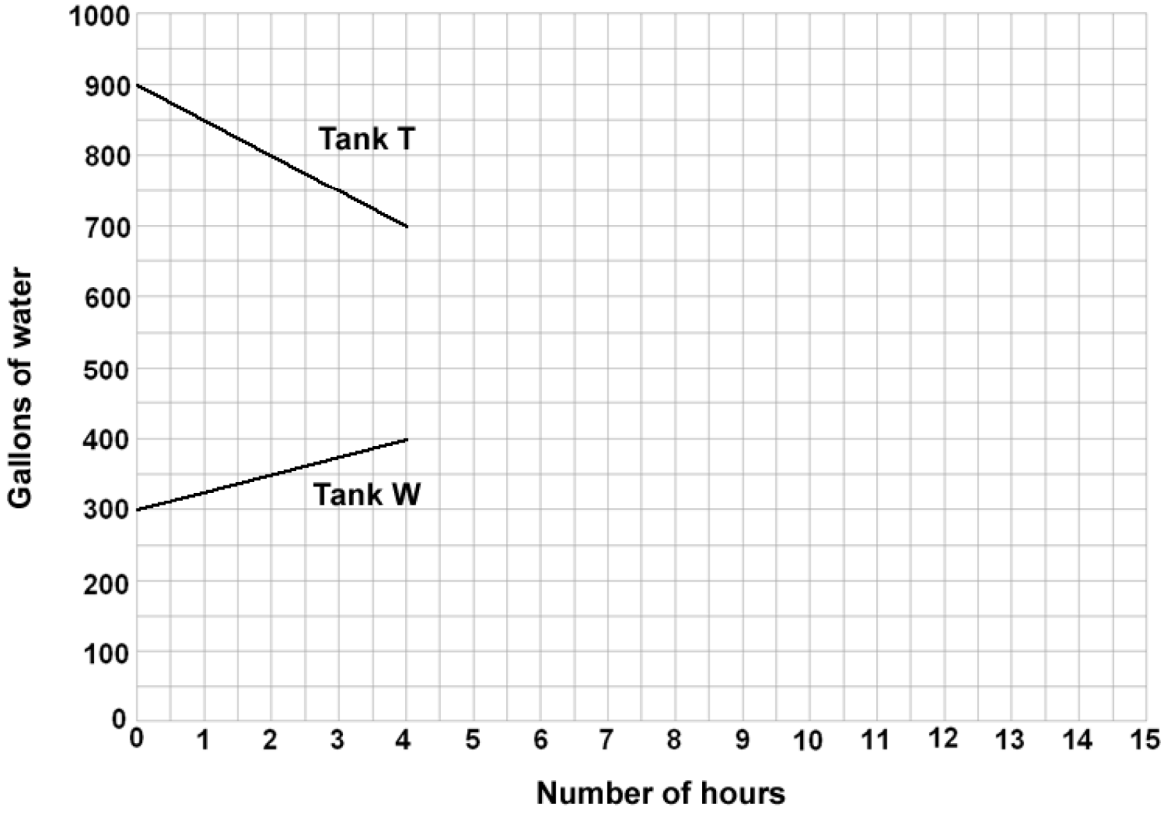
Concept Task



Two Storage Tanks

Two large storage tanks, T and W, contain water. T starts losing water at the same time additional water starts flowing into W. The graph below shows the amount of water in each tank over a period of time.



1. Assume that the rates of water loss and water gain continue as shown. When will the two tanks contain the same amount of water? Explain how you found your answer and interpret your solution in terms of the problem.

2. Write an equation for each storage tank that can be used to determine the amount of water in the tank at any given number of hours. How many different coordinate pairs (x and y pairs) will satisfy both equations? Explain.

3. How are the two equations the same and how are they different? Interpret each equation in terms of its corresponding graph.

4. Suppose Tank Z contains 550 gallons of water and is not gaining or losing water. When will Tank Z contain the same amount of water as Tank T? as Tank W? Will all 3 tanks ever contain the same amount of water at the same time? Explain.