Water Towers

A town has two water towers that serve its citizens. The tower on the east side of town has 800 kiloliters of water at 8 A.M., while the west tower has 300 kiloliters of water. The east tower is losing 50 kiloliters of water per hour, while the west tower is gaining 50 kiloliters every 2 hours.

Make a table of values for each tower.

Sketch each graph of the volumes of water in the towers over time. You do not need to place numbers on the axes.

East Tower **West Tower**

Answer the following:

1) After how many hours will the tanks have the same amount of water?

2) At what time will the tanks have the same amount of water?

3) How much water will be in the tanks when they have the same amount?

4) What is the significance of the point on the horizontal axis where the line intercepts the axis?

5) If the east tank continues to lose water, after how many hours will the east tank be empty?

6) Write an equation that would signify when the east tank is empty. (Solving it would produce the number of hours it takes for the tank to empty.)

7) What will a negative variable on the horizontal axis mean?

8) What is the significance of the points on the vertical axis?

9) Write an equation for each tank to determine how many kiloliters of water are in each tank at any given time.

10) What kind of relationship does your graph represent?

11) How do you know that the relationship you stated in #8 is such?

12) What does slope in the context of this problem actually mean?

13) What are the domain and range of this problem? What is significant about them?