What are the variables in each graph? Describe how the variables are related at various points on the graph.

1. **Volume of Pool Water**
   - **Variables:** Time and Volume
   - **Description:** The volume increases at a constant rate as time increases.

2. **Temperature of Water**
   - **Variables:** Depth and Temperature
   - **Description:** The temperature decreases at a constant rate as the depth increases.

3. **Plant Height**
   - **Variables:** Time and Plant Height
   - **Description:** The height of a plant increases at a constant rate as time increases.

Match each graph with its related table. Explain your answers.

4. **Distance vs. Time**
   - **Graph:**
   - **Table A:**
     - Time (h) | Distance (mi)
     - 1       | 60
     - 2       | 120
     - 3       | 180
     - 4       | 240
   - **Explanation:** C; the graph shows a constant speed of 50 mi/h

5. **Distance vs. Time**
   - **Graph:**
   - **Table B:**
     - Time (h) | Distance (mi)
     - 1       | 80
     - 2       | 125
     - 3       | 150
     - 4       | 140
   - **Explanation:** B; the graph shows varying speeds.

6. **Distance vs. Time**
   - **Graph:**
   - **Table C:**
     - Time (h) | Distance (mi)
     - 1       | 50
     - 2       | 100
     - 3       | 150
     - 4       | 200
   - **Explanation:** A; the graph shows a constant speed of 60 mi/h
Sketch a graph to represent the situation. Label each section.

7. You buy two shirts. The third one is free.

8. You warm up for gym class, play basketball, and then cool down.

9. The temperature warms up during the day and then decreases at night.

10. Error Analysis DVDs cost $19.99 each for the first 2 purchased. After that, they cost $5.99 each. Describe and correct the error in sketching a graph to represent the relationship between the total cost and the number of DVDs purchased.

   The graph indicates that the total cost for 3 DVDs is $5.99, which is not true. The total cost should be $45.97.

11. Sketch a graph of each situation. Are the graphs the same? Explain.
   a. your distance from school as you leave your house and walk to school
   b. your distance from school as you leave school and walk to your house

   No; in the first graph, the distance from school is decreasing, and in the second graph it is increasing.