8. [11 points] Let $W(t)$ be the temperature, in degrees Fahrenheit, of a cake t minutes after it is put in the oven. Assume $W(10) = 220$.

    a. [3 points] Give a practical interpretation of the statement $\displaystyle\int_5^{10} W'(t)\,dt = 120$.

    b. [3 points] Give a practical interpretation of the statement $\displaystyle\frac{1}{2}\int_3^5 W(t)\,dt = 80$.

    c. [3 points] Write a single mathematical equation describing the following statement: The average temperature of the cake over the first five minutes in the oven is the same as its temperature after three minutes in the oven.

    d. [2 points] Assuming all of the above statements in (a)-(c) are true, what will the temperature of the cake be five minutes after it is put in the oven?