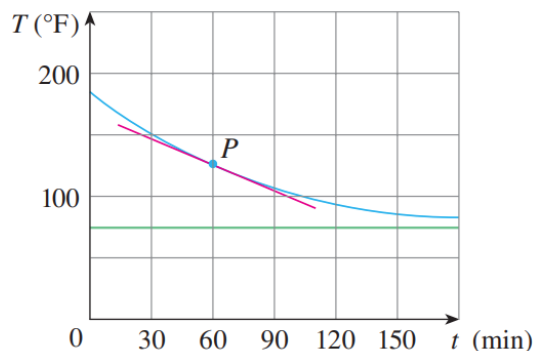


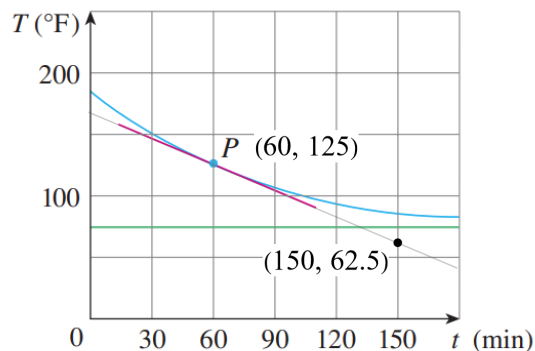
Exercise 46

A roast turkey is taken from an oven when its temperature has reached 185°F and is placed on a table in a room where the temperature is 75°F . The graph shows how the temperature of the turkey decreases and eventually approaches room temperature. By measuring the slope of the tangent, estimate the rate of change of the temperature after an hour.



Solution

Identify two points on the tangent line.



Then use the slope formula to determine the rate of change after an hour.

$$T'(60) = m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{62.5 - 125}{150 - 60} = -\frac{25}{36} \approx -0.694 \frac{^{\circ}\text{F}}{\text{s}}$$