

Oven Temperature

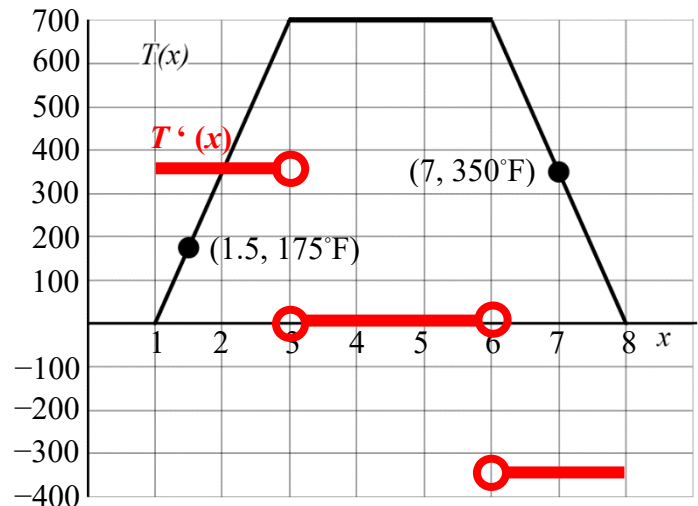
The graph shows the temperature in a pizza oven during a self-cleaning cycle. Let $T(x)$ be the temperature after x hours. Complete the boxes below. Write DNE if it does not exist.

1. Use the graph to find the derivative at each value.

$$T'(1.5) = \boxed{350}$$

$$T'(4) = \boxed{0}$$

$$T'(7) = \boxed{-350}$$



2. What is the measurement of unit of the values of the derivatives in the previous question? Circle one.

A. hours B. °F C. ovens D. dollars E. dollars per oven F. ovens per dollar
G. dollars per hour H. hours per dollar I. hours per °F **J. °F per hour**

3. Which of these is the interpretation of the meaning of $T'(1.5)$?

Circle one and complete the box for the choice you circled.

A. At 1.5 hours, the temperature of the oven is °F.

B. At 1.5 hours, the temperature of the oven is increasing at a rate of 350 °F per hour.

C. At 1.5 hours, the temperature of the oven is decreasing at a rate of °F per hour.

4. Which of these is the interpretation of the meaning of $T'(4)$? Circle one and, if applicable, complete the box.

A. At 4 hours, the temperature of the oven is 0 °F.

B. At 4 hours, the temperature of the oven is not changing

C. At 4 hours, the temperature of the oven is increasing at a rate of °F per hour.

D. The temperature of the oven is increasing at a rate of 4 °F per hour.

5. Which of these is the interpretation of the meaning of $T'(7)$?

Circle one and complete the box for the choice you circled.

A. At 7 hours, the temperature of the oven is °F.

B. At 7 hours, the temperature of the oven is increasing at a rate of °F per hour.

C. At 7 hours, the temperature of the oven is decreasing at a rate of 350 °F per hour.

$$6. \lim_{x \rightarrow 3^-} \frac{T(x) - 700}{x - 3} = \boxed{350} \quad \lim_{x \rightarrow 3^+} \frac{T(x) - 700}{x - 3} = \boxed{0} \quad T'(3) = \lim_{x \rightarrow 3} \frac{T(x) - 700}{x - 3} = \boxed{\text{DNE}}$$

$$7. \lim_{x \rightarrow 6^-} \frac{T(x) - 700}{x - 6} = \boxed{0} \quad \lim_{x \rightarrow 6^+} \frac{T(x) - 700}{x - 6} = \boxed{-350} \quad T'(6) = \lim_{x \rightarrow 6} \frac{T(x) - 700}{x - 6} = \boxed{\text{DNE}}$$

8. Sketch the graph of $T'(x)$ on the above set of axes. (Shown in red.)