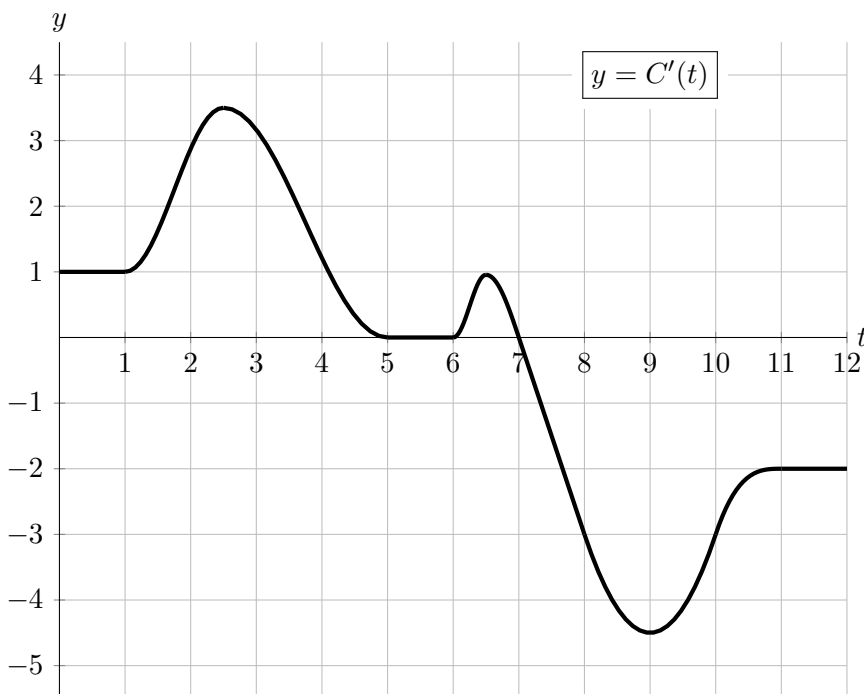8. [6 points] Let $C(t)$ be the temperature, in degrees Fahrenheit (°F), of a cat café t hours after noon on a certain winter day. The function $C'(t)$, the **derivative** of $C(t)$, is graphed below.

a. [2 points] Over which of the following intervals of t, if any, is the temperature of the cat café constant? Circle **all** correct answers.

$[0, 1]$ $\qquad\qquad$ $[5, 6]$ $\qquad\qquad$ $[7, 8]$ $\qquad\qquad$ $[11, 12]$ $\qquad\qquad$ NONE OF THESE

b. [2 points] Over which of the following intervals of t, if any, is the temperature of the cat café decreasing? Circle **all** correct answers.

$[2, 3]$ $\qquad\qquad$ $[3, 4]$ $\qquad\qquad$ $[8, 9]$ $\qquad\qquad$ $[9, 10]$ $\qquad\qquad$ NONE OF THESE

c. [1 point] At which of the following times t is the temperature in the cat café changing most rapidly? Circle the **one** correct answer.

$t = 1.5$ $\qquad\qquad$ $t = 2.5$ $\qquad\qquad$ $t = 8$ $\qquad\qquad$ $t = 9$

d. [1 point] At which of the following times t is the temperature in the cat café the highest? Circle the **one** correct answer.

$t = 0$ $\qquad\qquad$ $t = 2.5$ $\qquad\qquad$ $t = 7$ $\qquad\qquad$ $t = 12$