1. [12 points] The function \( q(x) \) is continuous on \([0, 12]\). The graph of \( q'(x) \) (the derivative of \( q \)) is given below.

\[ y = q'(x) \]

\[ 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 \quad 10 \quad 11 \quad 12 \]
\[-3 \quad -2 \quad -1 \quad 0 \quad 1 \quad 2 \quad 3 \]

a. [2 points] On which of the following interval(s) is \( q(x) \) decreasing? Circle all correct choices.

(0,2) (6,7) (7,8) NONE OF THESE

b. [2 points] On which of the following interval(s) is \( q(x) \) concave down? Circle all correct choices.

(0,2) (2,4) (6,7) NONE OF THESE

c. [2 points] Which of the following are critical point(s) of \( q'(x) \)? Circle all correct choices.

\( x = 2 \) \( x = 5 \) \( x = 9 \) NONE OF THESE

d. [2 points] Which of the following are critical point(s) of \( q(x) \)? Circle all correct choices.

\( x = 5 \) \( x = 6 \) \( x = 11 \) NONE OF THESE

e. [2 points] At which of the following value(s) of \( x \) does \( q(x) \) have a local maximum? Circle all correct choices.

\( x = 6 \) \( x = 7 \) \( x = 11 \) NONE OF THESE

f. [2 points] At which of the following value(s) of \( x \) does \( q(x) \) have an inflection point? Circle all correct choices.

\( x = 2 \) \( x = 4 \) \( x = 7 \) NONE OF THESE