**9.** [12 points]  A function $p(x)$ is continuous on $(-\infty, \infty)$. Part of its **derivative** $p'(x)$ is shown below.



**a.** [2 points] At which of the following $x$-value(s) does $p(x)$ have a critical point?

$\boxed{-8}$ $\qquad$ $\boxed{-3}$ $\qquad$ $-2$ $\qquad$ $\boxed{1}$ $\qquad$ $7$

**b.** [2 points] At which of the following $x$-value(s) does $p(x)$ have a local minimum?

$-8$ $\qquad$ $-4$ $\qquad$ $\boxed{-3}$ $\qquad$ $0$ $\qquad$ $\boxed{3}$

**c.** [2 points] On which of the following interval(s) is $p(x)$ increasing on the entire interval?

$(-4, -3)$ $\qquad$ $\boxed{(-3, 0)}$ $\qquad$ $(1, 2)$ $\qquad$ $\boxed{(3, 7)}$

**d.** [2 points] On which of the following interval(s) is $p(x)$ concave up on the entire interval?

$(-5, -3)$ $\qquad$ $\boxed{(0, 1)}$ $\qquad$ $\boxed{(3, 7)}$ $\qquad$ $(7, 9)$

**e.** [2 points] On which of the following interval(s) is the product $p'(x) \cdot p''(x)$ negative on the entire interval?

$(-5, -4)$ $\qquad$ $\boxed{(-2, 0)}$ $\qquad$ $\boxed{(1, 3)}$ $\qquad$ $(3, 5)$

**f.** [2 points] At which of the following $x$-value(s) does $p(x)$ have both a local extremum and an inflection point?

$-7$ $\qquad$ $\boxed{-5}$ $\qquad$ $-3$ $\qquad$ $0$ $\qquad$ $3$ $\qquad$ NONE OF THESE